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An analysis of school attendance, academic achievement and certain intervening factors affecting a sample of tenth grade students at Tuskegee Institute High School, Tuskegee, Alabama

Mildred V. White
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AN ANALYSIS OF SCHOOL ATTENDANCE, ACADEMIC ACHIEVEMENT 
AND CERTAIN INTERVENING FACTORS AFFECTING A SAMPLE 
OF TENTH GRADE STUDENTS AT TUSKEGEE INSTITUTE 
HIGH SCHOOL, TUSKEGEE, ALABAMA

A Thesis Submitted to the
Faculty of the School of Education,
Atlanta University, in Partial 
Fulfillment of the Requirements 
for the Degree of Master of Arts

By
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July, 1965
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Dr. Huey C. Charlton, Major Advisor

Dr. L. E. Boyd, Co-Advisor

M.V.W.
In dedication to: --

Richard C. White

Dr. Theodore J. Pinnock --

For their patience,
couragement, and assistance
during the period of research.
# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACKNOWLEDGMENTS</td>
<td>ii</td>
</tr>
<tr>
<td>LIST OF TABLES</td>
<td>iv</td>
</tr>
<tr>
<td>Chapter</td>
<td></td>
</tr>
<tr>
<td>I. INTRODUCTION</td>
<td>1</td>
</tr>
<tr>
<td>Rationale</td>
<td></td>
</tr>
<tr>
<td>Evolution of the Problem</td>
<td></td>
</tr>
<tr>
<td>Contribution to Educational Knowledge</td>
<td></td>
</tr>
<tr>
<td>Statement of the Problem</td>
<td></td>
</tr>
<tr>
<td>Purposes of the Study</td>
<td></td>
</tr>
<tr>
<td>Definition of Terms</td>
<td></td>
</tr>
<tr>
<td>Method of Research</td>
<td></td>
</tr>
<tr>
<td>Locale of Study</td>
<td></td>
</tr>
<tr>
<td>Limitations of the Study</td>
<td></td>
</tr>
<tr>
<td>Subjects</td>
<td></td>
</tr>
<tr>
<td>Instruments</td>
<td></td>
</tr>
<tr>
<td>Research Procedures</td>
<td></td>
</tr>
<tr>
<td>Survey of Related Literature</td>
<td></td>
</tr>
<tr>
<td>II. ANALYSIS OF DATA</td>
<td>21</td>
</tr>
<tr>
<td>Academic Achievement</td>
<td></td>
</tr>
<tr>
<td>Personal Adjustment</td>
<td></td>
</tr>
<tr>
<td>Social Adjustment</td>
<td></td>
</tr>
<tr>
<td>Intelligence</td>
<td></td>
</tr>
<tr>
<td>Parent Educational Level</td>
<td></td>
</tr>
<tr>
<td>III. SUMMARY, CONCLUSIONS, IMPLICATIONS AND RECOMMENDATIONS</td>
<td>52</td>
</tr>
<tr>
<td>BIBLIOGRAPHY</td>
<td>62</td>
</tr>
<tr>
<td>APPENDIX</td>
<td>65</td>
</tr>
<tr>
<td>VITA</td>
<td>66</td>
</tr>
<tr>
<td>Table</td>
<td>Description</td>
</tr>
<tr>
<td>-------</td>
<td>------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>1.</td>
<td>Comparison of Achievement in the Four Academic Areas between Regular Attenders and Non-Regular Attenders</td>
</tr>
<tr>
<td>2.</td>
<td>Computer Output in Comparing Achievement of Four Academic Areas between Regular Attenders and Non-Regular Attenders</td>
</tr>
<tr>
<td>3.</td>
<td>Comparison of Achievement of Regular and Non-Regular Tenth Grade Students in Mathematics at Tuskegee Institute High School</td>
</tr>
<tr>
<td>4.</td>
<td>Computer Output in Comparing Achievement of Regular and Non-Regular Tenth Grade Students in Mathematics</td>
</tr>
<tr>
<td>5.</td>
<td>Comparison of Achievement of Regular and Non-Regular Tenth Grade Students in Science at Tuskegee Institute High School</td>
</tr>
<tr>
<td>6.</td>
<td>Computer Output in Comparing Achievement in Science between Regular and Non-Regular Tenth Grade Students</td>
</tr>
<tr>
<td>7.</td>
<td>Comparison of Achievement of Regular and Non-Regular Tenth Grade Students in Social Studies at Tuskegee Institute High School</td>
</tr>
<tr>
<td>8.</td>
<td>Computer Output in Comparing Achievement in Social Studies between Regular and Non-Regular Tenth Grade Students</td>
</tr>
<tr>
<td>9.</td>
<td>Comparison of Achievement of Regular and Non-Regular Tenth Grade Students in Reading at Tuskegee Institute High School</td>
</tr>
<tr>
<td>10.</td>
<td>Computer Output in Comparing Achievement in Reading between Regular and Non-Regular Tenth Grade Students</td>
</tr>
<tr>
<td>11.</td>
<td>Comparison of Achievement of Regular and Non-Regular Tenth Grade Students in Personal Adjustment</td>
</tr>
<tr>
<td>12.</td>
<td>Computing Output in Comparing Achievement in Personal Adjustment between Regular and Non-Regular Tenth Grade Students</td>
</tr>
</tbody>
</table>
Table

<table>
<thead>
<tr>
<th>Table Number</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>13.</td>
<td>Comparison of Achievement of Regular and Non-Regular Tenth Grade Students in Social Adjustment at Tuskegee Institute High School</td>
<td>40</td>
</tr>
<tr>
<td>14.</td>
<td>Computer Output in Comparing Achievement in Social Adjustment between Regular and Non-Regular Tenth Grade Students</td>
<td>41</td>
</tr>
<tr>
<td>15.</td>
<td>Computer Output in Comparing Achievement in Total Adjustment between Regular and Non-Regular Tenth Grade Students</td>
<td>43</td>
</tr>
<tr>
<td>16.</td>
<td>Computer Output for the Analysis of Variance for IQ of Regular and Non-Regular Tenth Grade Students</td>
<td>44</td>
</tr>
<tr>
<td>17.</td>
<td>Mean, Variance, Standard Deviation and Combined Means, in Four Academic Areas and IQ at Tuskegee Institute High School between Regular and Non-Regular Tenth Grade Students</td>
<td>46</td>
</tr>
<tr>
<td>18.</td>
<td>Computer Output of the Comparison of Parent Educational Level with Performance of Regular and Non-Regular Tenth Grade Students in Four Academic Areas</td>
<td>49</td>
</tr>
<tr>
<td>19.</td>
<td>Average Educational Level of Parents and Performance of Regular and Non-Regular Tenth Grade Students in Four Academic Areas</td>
<td>51</td>
</tr>
</tbody>
</table>
Rationale

In a democracy, the education of an individual is conceived as a duty and not a privilege; for the chief goal of the school is the effective and continuous optimum development of all individuals. The real strength of a democracy derives largely from the notion that individuals are different and that society must both recognize and accept such differences. To really accept individual differences, adequate provisions must be in evidence to accommodate them effectively and to facilitate both the independence and inter-dependence of individuals.

The task of the school is the education of children who are living in today's world for the world of tomorrow. For those of our youth who have been blighted by our social lacks and our social evils, the school can be the avenue whereby this blight will be removed and the promise of the good life fulfilled.¹

In these days when the problem of the dropout has gained so much attention, it must be recognized that many schools have the problem of the drop-in students. These persons will seldom attend school for a

full five days in a given week, electing instead to drop in for a part of the time. Non-attendance of students has been a problem of varied proportions for years. Every state in the United States has adopted attendance laws requiring its population of school age to attend school for a specific length of time.

It has been an accepted fact that excessive absence interferes with the task of the school and likewise has constructed a serious problem to school and society. The entire history of education has left little doubt that poor, economic and social conditions have complicated this problem. Heck has said that the non-attendance problem constitutes our largest educational waste. He stated that attendance has materially improved during the last three decades, but non-attendance is still sufficiently great as to constitute a serious problem.¹

It was assumed that students who fail to attend school regularly were not likely to achieve academically and socially as well as students who attended regularly. How often a tenth grade student could absent himself from his class without its reflecting on his achievement, and his adjustment, was one of the questions on which this study proposed to give some insights. Some of the attendant factors which could influence academic achievement and social adjustment were examined. Attendant factors such as educational level of parents, and the student's ability were investigated to determine the true effects of absenteeism on academic achievement and social adjustment. A student who was

continuously absent but who was exposed to an educated parent and was continuously involved in cultural activities would not feel the effects of absenteeism on his academic achievement as much as a student who was absent and who was not culturally and academically exposed.

As mentioned earlier, the many attendant factors or intervening variables could distort the true effects of absenteeism in these circumstances. Every conscious effort was made to gather all the relevant data and extract from that data information and inferences which may throw some light on the problem of absenteeism.

**Evolution of the problem**

For over a decade this writer worked in a rural high school in Macon County, Alabama. Many observers were led to believe that this was a unique county in Alabama because it had within its boundary Tuskegee Institute, a large Veterans Hospital, and a concentration of intellectuals. This in part was true but its profile in terms of school attendance and academic achievement was not significantly different from any other county in Alabama.

Over the years this writer became increasingly concerned as to what were the identifiable relationships in the setting briefly described between school attendance, academic achievement and socio-economic structure of the families. From this writer's point of view, it was unrealistic to assume that any one variable or combination of variables were accountable for poor attendance, low school achievement, low intelligence levels and poor personal and social adjustment. There were too
many intervening variables involved which did not lend themselves to accurate measurement but which certainly would permit for meaningful inferences to be drawn after an analysis of all the relevant data that could and was being collected. The proposed study was designed to treat the writer's curiosity in terms of analyzing the overall situation with the uniqueness of the setting provided by Macon County and Tuskegee Institute High School.

Contribution to educational knowledge

The researcher was of the opinion that this investigation would make a significant contribution in the following ways:

1. This study will provide a base for the counseling and guidance services at Tuskegee Institute High School and all other high schools having students with similar characteristics.

2. It will set the stage for comparisons to be made in terms of all factors under investigation between parents having a given educational level in this area and parents having similar educational level in other areas.

3. It may substantiate previous thoughts that many parents of school-age children need guidance.

4. It may increase the probability of educators to accept the fact that a good counseling and guidance program in every public school is an essential and integral part of an educational system.

5. Bearing in mind the four possible contributions that can be made, it must not be overlooked that this study also had important sociological implications. The sociological implications were based on the observation that Tuskegee Institute High School is an institution catering to lower and upper middle class Negroes. It may be of further interest to equate certain variables between Negro high school students at Tuskegee Institute High School and white students within the same
area and compare the results. A similar procedure could be followed for parents in terms of income, educational level, age and size of family. Finally, regardless of the outcome of the analysis, educators all over the United States would be in position to use this investigation as a basis from which to discuss problems related to guidance and counseling.

Statement of the problem

This investigation was concerned with an analysis of school attendance, academic achievement and certain intervening factors affecting a sample of tenth grade students at Tuskegee Institute High School, Tuskegee, Alabama. These intervening factors were:

1. Intelligence
2. Personal adjustment
3. Educational status of parents
4. Social adjustment

The problem got its birth within the framework of a national question which was yet unanswered -- How does sporadic attendance affect achievement and what were the attendant factors contributing to sporadic attendance? The overall effects of this situation had affected the entire society in several ways.

Purposes of the study

The broad and fundamental purpose of this study was to analyze school attendance, academic achievement and certain intervening factors affecting a sample of tenth grade students at Tuskegee Institute High
School. Specifically, this investigation sought to relate absenteeism to academic achievement, personal adjustment, social adjustment, and educational level of parents. Upon the completion of this investigation, very meaningful statements were made as to the effects of absenteeism on students.

More specifically, the purposes of this study were to test the following null hypotheses:

1. There is no significant difference in academic achievement of regular and non-regular tenth grade students.

2. There is no significant difference in personal adjustment of regular and non-regular tenth grade students.

3. There is no significant difference in social adjustment of regular and non-regular tenth grade students.

4. There is no significant difference in terms of attendance and achievement among tenth grade students at Tuskegee Institute High School regardless of their intelligence.

5. There is no significant difference, if any, in academic achievement of regular and non-regular tenth grade students regardless of their parents' educational achievement.

Definition of terms

The following terms will be defined for the purpose of this study:

1. Regular attenders - refers to those students with the best attendance records for the 1964-65 academic year.
2. Non-regular attenders - refers to those students with the worst attendance records for the 1964-65 academic year.

3. Achievement - refers to the mastery of subject matter, the knowledge and skills as measured by the Sequential Test of Educational Progress.

4. Personal adjustment - refers to certain psychological factors as measured by the California Test of Personality.

5. Social adjustment - refers to certain psychological factors as measured by the California Test of Personality.

Method of research

The research method used in this study was the descriptive method, utilizing standardized instruments.

Locale of study

This study was conducted during the 1964-65 academic year at Tuskegee Institute High School, Tuskegee, Alabama.

Limitations of the study

This study was confined to tenth grade students at Tuskegee Institute High School in Tuskegee, Alabama. The most limiting factor in this investigation was the human element which did not permit itself for accurate measurements outside the realms of a tightly-structured setting.

Subjects

The subjects that were used in this study were one hundred tenth grade students at Tuskegee Institute High School in Tuskegee, Alabama.
Instruments

1. The California Test of Personality has been designed to identify and reveal the status of certain highly important factors in personality and social adjustment usually designated as intangibles. (See Appendix A.)

   In this personality test individual reactions to items were obtained to detect the areas and specific types of tendencies to think, feel and act which reveal undesirable individual adjustments.

   The items in the Personal Adjustment half of the test were designed to measure evidences of six components of personal security; the items in the Social Adjustment half of the test, of six components of social security.

2. The Otis Quick Scoring Mental Ability Test - Gamma Test, form AM. The purpose of the test was to measure mental ability, thinking power or the degree of the maturity of the mind. The test contained eighty questions which included questions on vocabulary and arithmetic reasoning. (See Appendix B.)

   A measure of a pupil's brightness called an Intelligence Quotient, found by obtaining the pupil's Gamma I.Q. should indicate the probable rate of progress the pupil would make in school.

3. The Sequential Test of Educational Progress - Level 2-A. This was a type of achievement test series, measuring the broad outcomes of general education. The five major areas covered in this series, focus on skills in solving new problems on the basis of information learned. (See Appendix C.)
For purposes of this study, four areas were covered.

Research procedures

The steps involved in conducting this study proceeded as follows:

1. Permission to conduct this study was secured from the proper officials.

2. The pertinent literature related to the study was reviewed and summarized.

3. Administration of tests: The Otis Quick-Scoring Mental Ability Test, The California Test of Personality and The Sequential Test of Educational Progress.

4. The data derived from the testing program was presented in appropriate tables, charts, and/or graphs as indicated by the purpose of the study.

5. Comparisons were made and treated statistically wherever the data yielded to statistical analysis.

6. Findings, conclusions, implications and recommendations were drawn from the detailed analysis of all the data collected.

Review of related literature

A review of the literature pertaining to the topic under investigation revealed that many studies had been made in the area of school attendance.

In a society where one's personal worth is so much determined by his going or not going to school, and it is the accepted pattern that he goes, we must recognize that it is the social force that really puts the compulsory in school attendance. The written law is only symptomatic of this. This is evidenced by the large percentage of children who now attend school beyond the age of legal compulsion. A child's attendance
is determined largely by the conditions in which he lives. There are vast differences among schools in many respects, such as the socio-economic levels of families, standards of living, housing, clothing, food, physical fitness and parental attitudes. Such factors must be considered in making comparisons of attendance percentages.¹

Many studies revealed, after making an inquiry into the attendance services in schools, that frequent absence from school is symptomatic of maladjustment of various types and forms.

In a study titled, "Comparative Study of Intelligence, School Achievement, Personality Development Between Students at Lumber City, Georgia," Epps¹ finding was that children who attend school regularly do achieve significantly higher levels of development mentally, socially, emotionally and academically than do those children who attend irregularly.²

Hudson reported that as far as intelligence was concerned, the regular school attender appeared to be experiencing a greater degree of mental growth and development than the irregular school attenders as indicated by the statistical indices.³


²A. L. Epps, "Comparative Study of Intelligence, School Achievement, Personality Development Between Students at Lumber City, Georgia" (unpublished master's thesis, School of Education, Atlanta University, 1954), p. 79.

Crider found in his study on the effect of absence on scholarship that there is a close relationship and percentile ranking on psychology tests and as the number of absences increased the average number of grade points decreased.¹

When age was considered as having an effect upon attendance, Hudson's findings were that regular school attenders, as they progress through school, were approximately a year younger than those whose attendance was irregular.²

Green found, when comparing two high schools and investigating factors associated with absenteeism that best attenders earn higher school marks than do worst attenders. He found that good attendance is reliably associated with high I.Q., favorable socio-economic status and favorable parental opinion of the school.

In general, Green's detailed findings support the conclusions that absenteeism is a symptomatic behavior associated with certain other independent variables each of which tends to be individually symptomatic of an unfavorable adjustment between the learner and the educational and social environment in which he is operating.³

¹Blake Crider, "The Effects of Absence on Scholarship," School and Society. (July, 1929), p. 27.

²Hudson, 75.

Other studies have reported that failure in academic subjects were reasons for poor attendance or withdrawal.

Alexander's findings in a study of school attendance in the Lord Beaconfield High School were that the reasons given for absences from school are poor grades, broken homes, dislike for teachers, dislike for subjects and employment. Alexander stated in her conclusions that reasons given by parents for student absentees can be grouped into matters dealing with students' attitudes toward school and parents' attitude toward school and the total welfare of the children.¹

Feingold stated that there was no question that attendance does affect scholarship. He concluded that frequent absence from school, whatever the cause, will result in poor achievement.²

Reports were made that retardation is so closely bound up with grade and subject failure, as well as attendance, that it is difficult to consider these topics separately. The pupil who has failed his grade—who is retarded, will often lose interest in school and skip classes.

Alexander in her study of school attendance concluded:

1. The best attendance for the entire semester was found in the eleventh and twelfth grades.

2. The tenth grades constituted the greatest percentage of absences for each trimester of the semester.


3. The largest number of dropouts occurred in the tenth grade. The most frequently given reasons for discontinuing school were to enter the armed forces, to go to work, and poor health. Alexander drew the implication that if a student is kept in school until he completes the tenth grade, the chances are greater for his remaining until graduation.¹

Gordon reported from her findings that the boys' most frequent reasons for non-attendance were: excessive absences, illness, working, helping at home, truancy and lack of interest. The girls offered such reasons as excessive absences, pregnancy, illness, and indifference.

She concluded that there was a higher percentage of average daily attendance in the junior and senior grades as compared with a lower percentage of average daily attendance for the other grades. On the average, girls attended school more regularly than boys except in the twelfth and eighth grades. Attendance for boys was relatively low.²

Eighty per cent of the youth, ages sixteen and seventeen are in school. Sixty per cent of the fifth-grade students are now completing the twelfth grade and two-thirds of our ninth-grade pupils are completing the twelfth grade. Before the end of this year, 1,000,000 will drop out of school. Statistics show that, of millions who drop out of school before high school graduation, only a small handful will ever return.

¹Alexander, 90.

It was important here to give some consideration to the dropout problem and its relationship to attendance.

Bell, in his study of some characteristics of students who withdraw from high school, found that poor attendance characterized most of the dropouts; 60 per cent were below the sigma index score of 95; the school did not meet the needs of those students who had ability; most of the students were uncertain of their reasons for leaving.¹

Carrino found that of the seventy-two students who dropped out of school before their senior year only one-third dropped out before their sophomore year, while well over half dropped out during the tenth and eleventh year.²

According to many studies, dropouts most often give two reasons for leaving school: financial need and dislike of school.

Cook's study of ninety-five dropouts from a large city high school found that the reasons for leaving school, as given by the dropouts were: going to work (39.6 per cent), a dislike of school (20.9 per cent), marriage (20.9 per cent), failing courses (9.4 per cent), needed at home (4.6 per cent), left home (2.3 per cent) and administrative request (2.3 per cent). On the other hand, in the opinion of the counselor the reasons were these: failure and retardation (34.9 per cent), home circumstances (28.1 per cent), marriages (20.2 per cent),

¹Dorien M. Bell, "Some Characteristics of Students who Withdraw from West High School in Salt Lake City, Utah," Salt Lake City Department of Education, Salt Lake City, Utah, 1954, p. 60.

feeling of rejection (9.6 per cent) and conflicts with teachers (7.2 per cent).  

Investigators were not in agreement concerning the importance of intelligence as a factor in dropping out of school. Some studies have found that intelligence is not particularly important, while others show that low scholastic aptitude is one of the characteristics of the potential dropout. Several studies are of particular interest on this point.

Lazore found that 82.4 per cent of the dropouts from the Tacoma and Pierce County public schools during the first semester of 1956 had IQ's from 90 to 100, but that of the ninth graders of the previous three years, 60.1 per cent, 60.9 per cent, and 57.1 per cent, respectively, had average ability.

Woollat reported that in New York State Holding Power Project 12.1 per cent of the dropouts had IQ's of 110 and above, and 30.4 per cent had IQ's below 90.

Bowman and Matthews found a range of 60-115 in IQ, with a mean of 83 and that 75 per cent of the dropouts fell in the lower half of the distribution; 55 per cent of those who stayed in school also did.

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Some studies report that retardation is so closely bound up with grade and subject failure and attendance that it is difficult to consider these topics separately. The pupil who has failed his grade—who is retarded will often lose interest in school and skip classes.

The U. S. Department of Labor found that 84 per cent of the dropouts were retarded at least one year and 53 per cent were retarded two or more years. Also, three dropouts in ten left school in the eighth grade or before and six in ten never enrolled in the tenth grade.\(^1\)

Investigators report that absence results in loss of skill and knowledge and contributes to continued failure and the vicious circle remains unbroken. According to some reporting, retardation is considered one of the most reliable measures of the probability that a pupil will not finish high school.\(^2\)

Perty found a relationship between reading ability and withdrawal from high school. Three times as many poor readers as good readers dropped out of school and the likelihood of a poor reader's dropping out was greater when other factors pressuring a student toward withdrawal were present.

An extensive study of the impact of social class on adolescents, were made in a Midwest town in 1941-42 by Hollingshead and one phase of the study concerned the number of dropouts and the factors which


contribute to their leaving school. All the youth of high school age of the upper classes were in school. By far the largest proportion of dropouts, eight out of nine, came from the lowest social class. Class position was determined by the way the family lived, its income, its possessions, the amount of education of the father and the mother, the family's standing in the community and its participation in community activities.¹

Stetler reported that Negro pupils dropped out of school at a rate about 60 per cent. The social and economic status of the family was probably a significant factor in the high rate of school leavers, among Negro boys and girls.²

Bledsoe found that those whose parents had some college work, did not drop out; those whose parents completed high school dropped out to the smallest extent; next ranked parents with eight years of school, parents with one to four years of school (largest proportion of dropouts).³

Nachman, Getson and Odgers reported that 28.5 per cent of the fathers of dropouts had completed twelve or more school grades but that

³Joseph C. Bledsoe, "An Investigation of Six Correlates of Student Withdrawal From High School," Journal of Educational Research, LIII (September, 1959), pp. 3-6
fathers of more than half (53.8 per cent) the dropouts were in semi-skilled or unskilled occupations.\(^1\)

Livingston found that a combination of factors is a better indicator of potential withdrawal from school than any single factor. His study determined that the highest correlation (.70) was obtained with a combination of factors which comprised low participation in formal and informal school activities, number of grades detained and status of persons with whom the pupil lived. Livingston's conclusion suggests that the greater the number of factors working to the disadvantage of the pupil, the greater the chance of the pupil's dropping out of school. However, if pupils were encouraged by school, they were able to overcome such disadvantages as failure in their studies and non-acceptance by their classmates.\(^2\)

Adolescents today are cut off, probably more than ever before from the adult society. They are still oriented toward fulfilling their parents' desires but they look very much to their peers for approval. As a consequence, American society now has in its midst a set of small teenage subcultures which focus teenage interest and attitudes on things far removed from adult responsibilities, subcultures which may develop standards that lead a child away from the goal toward which the schools are intended to lead. The values, activities, and interests which

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characterize the adolescent culture, as a whole, must be examined. But of most interest will be the ways in which these adolescent subcultures vary from school to school, from community to community, so that some insights can be gained into the factors which shape them in one direction or another. Thus it will be possible to gain some insight into the ways in which the climate of education pervading a school may better implement the hopes and ideals of contemporary society.¹

There is little debate about the value of keeping youth of high school age in school as long as possible, although the holding power of a school does not fully measure its success as an educational institution. The problem is to discover why schools are not holding more of their pupils through graduation and what can be done about it.

Though dropouts cite innumerable reasons for leaving school—to earn money for a car, to get married, to exploit their talents, the real reason is usually to escape the terrible pressures created by failure at school, boredom with dull courses, friction with teachers, discipline, punctuality, the unending shame of looking stupid in front of the rest of the class.²

The public school in general is a contributor to mental health rather than to delinquency, but there are still a few characteristics of the average school that may produce abnormal behavior. The chief


²James N. Miller, "It's a Dead-End Road for the Dropout," Readers Digest, (May, 1965), p. 127.
adverse element is the nature of the curriculum. Delinquents are typically nonbookish, nonintellectual, nonacademic, nonverbal individuals who do poorly in the traditional school subjects. It is probable that young delinquents experience a good deal of frustration in the course of their school life. By now it is certainly evident that they soon revolt against the traditional school and leave it at the earliest possible age, usually after periods of truancy.\(^1\)

CHAPTER II

ANALYSIS OF DATA

This chapter will be concerned with the analysis of all the data gathered from the tenth grade students at Tuskegee Institute High School, Tuskegee, Alabama. As has been mentioned previously, fifty regular and fifty non-regular students were administered an achievement test, a personality test and a mental ability test. The personal data sheets were used in analyzing the significance in terms of learning of regular and non-regular students. This was done in order to ascertain the influence certain variables had upon attendance. (See Appendix D.)

Analysis of the data will be used to provide factual information given in support or rejection of the purposes of the study. The data will be invaluable in determining the level of achievement, intelligence and adjustment of the subjects involved in this study.

For purposes of clarity, this chapter will remain within the framework of the following outline:

1. Statistical procedures
2. Description of population
3. Collection of the data
4. Analysis of the data within the framework of the hypothesis stated
5. Interpretative summaries

The statistical procedures involved in this investigation are concerned primarily with identifying significant differences in terms
of academic achievement and adjustment between regular and non-regular tenth grade students at Tuskegee Institute High School. To be more specific, the variables involved in this investigation are mathematics, reading, social studies, science, personal adjustment, social adjustment, and intelligence; these in effect will be used to determine significant differences as they are related to the two independent variables, regular attenders and non-regular attenders. Inferences will be drawn from the analytical method which in this study is a programmed analysis of variance for the 1620 computer written by Sigmund Tobias of New York University, New York. The complete analysis was done in the computer center at Tuskegee Institute, Tuskegee Institute, Alabama.

In addition to inferences which can be drawn, certain descriptive information will also be made in terms of the extent to which groups differ.

To accomplish the objectives of this study, the researcher used a sample of fifty regular attenders and fifty non-regular attenders from the tenth grade of Tuskegee Institute High School. The total population of the tenth grade was 250. The average age of sample was fifteen.

The students were ranked according to their absentee records, the fifty having the highest absentee records and the fifty having the highest attendance records, twenty-five girls and twenty-five boys with regular attendance, twenty-five girls and twenty-five boys with non-regular attendance were obtained.

The test data were obtained from the administration of tests in the special testing program conducted by the investigator.
The scoring of the tests was done on the 805 IBM test scoring machine with the exception of the California Test of Personality which was scored manually. The test data were coded and punched on IBM punch cards for conventional data processing.

**Academic Achievement**

Table 1 indicates the array of one hundred scores in the four academic areas.

For executing the program for a one way analysis of variance through the 1620 computer to determine significant differences, the results appear in Table 2, which is the actual output from the processing.

Having a "F" value of 28.51 and a degree of freedom of 7/392 there is a significant difference at the 1 per cent level. A "F" value of 2.63 is all that was needed for significance at the 1 per cent level. The researcher infers that regular tenth grade students at Tuskegee Institute High School differ significantly from non-regular tenth grade students in the same institution in four academic areas, mathematics,
<table>
<thead>
<tr>
<th>Mathematics</th>
<th>Science</th>
<th>Social Studies</th>
<th>Reading</th>
</tr>
</thead>
<tbody>
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TABLE 2.--Computer output in comparing achievement of four academic areas between regular attenders and non-regular attenders

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>Var</th>
<th>SD</th>
<th>N</th>
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<tr>
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<td>Math Regular</td>
<td>256.20</td>
<td>304.2</td>
<td>17.44</td>
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<td>Math Non-Regular</td>
<td>219.94</td>
<td>261.6</td>
<td>16.26</td>
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<td>Science Regular</td>
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<td>108.2</td>
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<td>Reading Regular</td>
<td>279.26</td>
<td>147.2</td>
<td>12.13</td>
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</tr>
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<td>Reading Non-Regular</td>
<td>274.00</td>
<td>113.7</td>
<td>10.66</td>
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</table>

Source Sum of Squares  DF  Mean Square
Between  30896.00000  7.0  4413.71420
Within  60677.00000  392.0  154.78826
Total   91573.00000  399.0

F = 28.514528

science, social studies and reading. It is of significance to note that the arithmetic means for regular tenth grade students in the four areas are consistently higher than the arithmetic mean for any group of non-regulars. For example, the arithmetic mean for regular tenth graders in mathematics is 256.20 and for non-regular it is 219.94. It may be noted from Table 2 that this pattern continues throughout the four academic areas.

In further pulverizing the data to test the first hypothesis, the researcher examined each academic area independently along with the regular and non-regular tenth graders. Table 3 indicates the array of scores in mathematics and Table 4 indicates the computer output from Table 3.
TABLE 3.—Comparison of achievement of regular and non-regular tenth grade students in mathematics at Tuskegee Institute High School

<table>
<thead>
<tr>
<th>Regular Attenders Boys Score</th>
<th>Non-Regular Attenders Boys Score</th>
<th>Regular Attenders Girls Score</th>
<th>Non-Regular Attenders Girls Score</th>
</tr>
</thead>
<tbody>
<tr>
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</tbody>
</table>
TABLE 4.--Computer output in comparing achievement of regular and non-regular tenth grade students in mathematics

<table>
<thead>
<tr>
<th>Mean</th>
<th>Var</th>
<th>SD</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>259.0800</td>
<td>316.410000</td>
<td>17.787917</td>
<td>25 regular boys</td>
</tr>
<tr>
<td>254.0800</td>
<td>279.160000</td>
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<td>253.3200</td>
<td>287.476660</td>
<td>16.955136</td>
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</tr>
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<td>244.8000</td>
<td>216.250000</td>
<td>14.705141</td>
<td>25 non-regular girls</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Source</th>
<th>Sum of Squares</th>
<th>DF</th>
<th>Mean Square</th>
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<tr>
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<td>2633.50000</td>
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<td>877.83333</td>
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<td>26383.30000</td>
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<td>Total</td>
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</table>

\[ F = 3.19 \]

Having a "F" value of 3.19 and a degree of freedom of 3/96 the difference between regular and non-regular tenth grade students in mathematics is significant at the 5 per cent level. It is of interest to note the similarity in the Standard Deviation (17.79) of regular tenth grade boys and regular tenth grade girls (16.95) in mathematics. The regular students have a wider deviation than do the non-regular and non-regular girls deviate wider from regular girls than do non-regular boys from regular boys in mathematics.

One may conclude here that regular tenth grade students in mathematics have been exposed to more mathematical concepts and have more to deviate from than do non-regular tenth grade students who have been
exposed to fewer concepts and have less to deviate from. Examining the arithmetic mean it appears that regular tenth grade boys with a mean score of 259.08 are arithmetically inclined than regular tenth grade girls with a mean score of 253.32. The difference here in mean scores is (Regular Boys) 259.08 - (Regular Girls) 253.32 = 5.76. The difference in terms of the arithmetic mean between non-regular boys and non-regular girls in mathematics is (254.08 - 244.80) 9.28. It appears that even the non-regular tenth grade boys are superior in terms of performance in mathematics to the non-regular tenth grade girls in mathematics.

Table 5 indicates the array of scores in science.

Having a "F" value of 1.44 with degrees of freedom 3/96 there is no significant difference between regular and non-regular tenth grade students in science. It is of interest to note that the arithmetic mean for regular boys in science is higher than that of regular girls in science. The same pattern is true for non-regular boys and non-regular girls in science. Regular boys and non-regular girls vary less than do non-regular boys and regular boys. The variance for regular boys and non-regular girls is 97.08 and 87.24 respectively while the variance for non-regular boys and regular girls is 136.67 and 122.17 respectively. The similar pattern is true for the Standard Deviation.

Table 6 indicates the computer output for the array in Table 5. The greatest deviation takes place among the non-regular boys with a standard deviation of 11.690451. The deviation for the regular girls is 11.053204. The regular boys with a deviation of 9.853087 and the non-regular girls with a deviation of 9.340235 present a similar pattern.
TABLE 5.--Comparison of achievement of regular and non-regular tenth grade students in science at Tuskegee Institute High School

<table>
<thead>
<tr>
<th>Regular Attenders Boys Score</th>
<th>Non-Regular Attenders Boys Score</th>
<th>Regular Attenders Girls Score</th>
<th>Non-Regular Attenders Girls Score</th>
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TABLE 6.--Computer output in comparing achievement in science between regular and non-regular tenth grade students

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<td>264.6000</td>
<td>136.66666</td>
<td>11.690451</td>
<td>25 non-regular boys</td>
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<td>265.5600</td>
<td>122.17330</td>
<td>11.053204</td>
<td>25 regular girls</td>
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<tr>
<td>261.3600</td>
<td>87.24000</td>
<td>9.340235</td>
<td>25 non-regular girls</td>
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<table>
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<th>Source</th>
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<td>Within</td>
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<td>96.0</td>
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<td>Total</td>
<td>11115.70000</td>
<td>99.0</td>
<td></td>
</tr>
</tbody>
</table>

F = 1.643249

Table 7 indicates the array of scores for regular and non-regular boys and girls in social studies. Table 8 indicates the computer output for the array.

A "F" value of 1.65 and degrees of freedom 3/96 indicate that there is no significant difference in the performance of non-regular and regular tenth grade students enrolled in social studies. Regular boys, however, apparently score consistently higher than regular girls since the arithmetic means involved are 265.16 and 261.88 respectively. The degree of variation among regular tenth grade boys (100.81) is much higher than the degree of variation among regular tenth grade girls (95.44). It is quite a similar situation among non-regular tenth grade
<table>
<thead>
<tr>
<th>Regular Attenders Boys Score</th>
<th>Non-Regular Attenders Boys Score</th>
<th>Regular Attenders Girls Score</th>
<th>Non-Regular Attenders Girls Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>292</td>
<td>285</td>
<td>286</td>
<td>280</td>
</tr>
<tr>
<td>283</td>
<td>277</td>
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</tbody>
</table>
TABLE 8.--Computer output in comparing achievement in social studies between regular and non-regular tenth grade students

<table>
<thead>
<tr>
<th>Mean</th>
<th>Var</th>
<th>SD</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>265.1600</td>
<td>100.806660</td>
<td>10.040251</td>
<td>25 regular boys</td>
</tr>
<tr>
<td>263.6800</td>
<td>102.060000</td>
<td>10.102474</td>
<td>25 non-regular boys</td>
</tr>
<tr>
<td>264.8800</td>
<td>95.443333</td>
<td>9.769510</td>
<td>25 regular girls</td>
</tr>
<tr>
<td>259.7600</td>
<td>77.273333</td>
<td>8.790525</td>
<td>25 non-regular girls</td>
</tr>
</tbody>
</table>

Source

<table>
<thead>
<tr>
<th>Sum of Squares</th>
<th>DF</th>
<th>Mean Square</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between</td>
<td>465.10000</td>
<td>3.0</td>
</tr>
<tr>
<td>Within</td>
<td>9014.20000</td>
<td>96.0</td>
</tr>
<tr>
<td>Total</td>
<td>9479.30000</td>
<td>99.0</td>
</tr>
</tbody>
</table>

F = 1.651083

boys who vary 102.06 as against non-regular tenth grade girls who vary 77.27. It appears that tenth grade girls score lower than tenth grade boys in social studies, but tenth grade girls vary less than tenth grade boys in social studies.

Table 9 indicates the array of scores made by regular and non-regular tenth grade students in reading and Table 10 indicates the computer output using an analysis of variance.
TABLE 9.—Comparison of achievement of regular and non-regular tenth grade students in reading at Tuskegee Institute High School

<table>
<thead>
<tr>
<th>Regular Attenders Boys Score</th>
<th>Non-Regular Attenders Boys Score</th>
<th>Regular Attenders Girls Score</th>
<th>Non-Regular Attenders Girls Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>303</td>
<td>293</td>
<td>298</td>
<td>293</td>
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<tr>
<td>298</td>
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<tr>
<td>254</td>
<td>251</td>
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<td>258</td>
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</tbody>
</table>
TABLE 10.—Computer output in comparing achievement in reading between regular and non-regular tenth grade students

<table>
<thead>
<tr>
<th>Mean</th>
<th>Var</th>
<th>SD</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>281.32000</td>
<td>128.476660</td>
<td>11.334754</td>
<td>25 regular boys</td>
</tr>
<tr>
<td>275.76000</td>
<td>128.606660</td>
<td>11.340487</td>
<td>25 non-regular boys</td>
</tr>
<tr>
<td>277.20000</td>
<td>163.250000</td>
<td>12.776932</td>
<td>25 regular girls</td>
</tr>
<tr>
<td>272.24000</td>
<td>97.106666</td>
<td>9.854271</td>
<td>25 non-regular girls</td>
</tr>
</tbody>
</table>

Source | Sum of Squares | DF | Mean Square |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Between</td>
<td>1058.60000</td>
<td>3.0</td>
<td>352.86666</td>
</tr>
<tr>
<td>Within</td>
<td>12418.70000</td>
<td>96.0</td>
<td>129.36145</td>
</tr>
<tr>
<td>Total</td>
<td>13477.30000</td>
<td>99.0</td>
<td></td>
</tr>
</tbody>
</table>

\[ F = 2.727757 \]

A "F" value of 2.73 with degrees of freedom 3/96 indicates that there is a significant difference at the 5 per cent level in terms of performance between regular and non-regular tenth grade students enrolled in reading. The arithmetic means of the four groups under investigation vary from 281.32 to 272.24. Regular tenth grade boys had a mean score of 281.32 in reading while regular tenth grade girls had a mean score of 277.20. Regular tenth grade boys perform better than regular tenth grade girls and non-regular tenth grade boys perform better than non-regular tenth grade girls enrolled in reading. The variance between regular tenth grade boys (128.48) and regular tenth grade girls (128.61) is (.13) infinitely small, but the variance between regular tenth grade
girls (163.25) and non-regular tenth grade girls (97.11) is (66.11) extremely large. Although several intervening variables may enter into the picture on the basis of the figures appearing in Table 10, non-regular girls at Tuskegee Institute High School are responsible for the significant difference between regular and non-regular tenth grade students enrolled in reading.

**Personal Adjustment**

Table 11 indicates the array of scores for regular and non-regular tenth grade students in personal adjustment and Table 12 indicates the machine output.

Having a "F" value of .81 and a degree of freedom of 3/96 there is no significant difference in terms of performance between regular and non-regular tenth grade students in personal adjustment. Regular boys and girls have arithmetic means of approximately the same value, 62.81 and 62.08 respectively. The difference in the arithmetic mean between non-regular boys and non-regular girls is greater with 61.32 and 57.68 respectively. Regular girls vary much more (116.24) than regular boys (152.56) and non-regular girls vary more (165.64) than regular girls (116.24). Even though there is no significant difference among the four groups, regular tenth grade boys have a tendency to do better than regular tenth grade girls and non-regular tenth grade boys have a tendency to do better than non-regular tenth grade girls in personal adjustment.

**Social Adjustment**

Table 13 indicates the array of scores in social adjustment and Table 14 indicates the output from the computer.
TABLE II.--Comparison of achievement of regular and non-regular tenth grade students in personal adjustment

<table>
<thead>
<tr>
<th>Regular Attenders</th>
<th>Non-Regular Attenders</th>
<th>Regular Attenders</th>
<th>Non-Regular Attenders</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boys Score</td>
<td>Boys Score</td>
<td>Girls Score</td>
<td>Girls Score</td>
</tr>
<tr>
<td>81</td>
<td>80</td>
<td>85</td>
<td>77</td>
</tr>
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<td>28</td>
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</tbody>
</table>
TABLE 12.--Computing output in comparing achievement in personal adjustment between regular and non-regular tenth grade students

<table>
<thead>
<tr>
<th>Mean</th>
<th>Var</th>
<th>SD</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>62.84000</td>
<td>152.556660</td>
<td>12.351382</td>
<td>25 regular boys</td>
</tr>
<tr>
<td>61.32000</td>
<td>207.060000</td>
<td>14.389579</td>
<td>25 non-regular boys</td>
</tr>
<tr>
<td>62.08000</td>
<td>116.2l3330</td>
<td>10.781620</td>
<td>25 regular girls</td>
</tr>
<tr>
<td>57.68000</td>
<td>165.643330</td>
<td>12.870249</td>
<td>25 non-regular girls</td>
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</table>

<table>
<thead>
<tr>
<th>Source</th>
<th>Sum of Squares</th>
<th>DF</th>
<th>Mean Square</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between</td>
<td>391.88000</td>
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<td>130.626666</td>
</tr>
<tr>
<td>Within</td>
<td>15396.08000</td>
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<td>160.37583</td>
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<tr>
<td>Total</td>
<td>15787.96000</td>
<td>99.0</td>
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</table>

\[ F = .814503 \]

The analytical method used in this table and similar tables is a programmed analysis of variance for the 1620 computer prepared at New York University.
TABLE 13.--Comparison of achievement of regular and non-regular tenth grade students in social adjustment at Tuskegee Institute High School

<table>
<thead>
<tr>
<th>Regular Attenders Boys Score</th>
<th>Non-Regular Attenders Boys Score</th>
<th>Regular Attenders Girls Score</th>
<th>Non-Regular Attenders Girls Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>79</td>
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<td>81</td>
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</tbody>
</table>
TABLE 14.--Computer output in comparing achievement in social adjustment between regular and non-regular tenth grade students

<table>
<thead>
<tr>
<th>Mean</th>
<th>Var</th>
<th>SD</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>61.440000</td>
<td>129.756660</td>
<td>11.391078</td>
<td>25 regular boys</td>
</tr>
<tr>
<td>60.680000</td>
<td>257.393330</td>
<td>16.043482</td>
<td>25 non-regular boys</td>
</tr>
<tr>
<td>61.240000</td>
<td>99.940000</td>
<td>9.969999</td>
<td>25 regular girls</td>
</tr>
<tr>
<td>64.160000</td>
<td>143.223330</td>
<td>11.967594</td>
<td>25 non-regular girls</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Source</th>
<th>Sum of Squares</th>
<th>DF</th>
<th>Mean Square</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between</td>
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<td>60.34666</td>
</tr>
<tr>
<td>Within</td>
<td>15127.52000</td>
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<tr>
<td>Total</td>
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<td></td>
</tr>
</tbody>
</table>

F = .38962

There is no significant difference in terms of social adjustment between regular and non-regular tenth grade students. An "F" value (0.38) which is less than unity readily indicates that there is no significant difference in the four groups under investigation. An examination of the four means gives rise to something which should be of great interest—non-regular girls have a higher arithmetic mean (64.16) than any of the other three groups. It should also be noted that non-regular boys have the lowest mean of 60.68 in social adjustment. The non-regular girls mean score seems to give rise to the question as to whether the school is the best environment in which to develop social
adjustment or whether the school should have a wider variety of experiences designed to develop social adjustment. Referring to Table 11, it may be observed that non-regular girls had the lowest mean score of 57.68 in personal adjustment. The researcher may assume therefore that based on the figures available, Tuskegee Institute High School is doing a better job in teaching tenth grade girls personal adjustment than it is doing in teaching tenth grade girls social adjustment. Based on the figures and whatever intervening variables the reader wishes to take into account, it appears that tenth grade girls who fail to attend school regularly do better in social adjustment than tenth grade regular and non-regular boys and tenth grade regular girls.

Intelligence

Subsequent contingency tables treating total adjustment and intelligence will not be shown, only the computer output for the analysis of variances will be shown. Table 15 indicates the computer output for the analysis of variance between regular and non-regular tenth grade students total adjustment.

There is no significant difference in terms of total adjustment between regular and non-regular tenth grade students at Tuskegee Institute High School. A "F" value of 0.06, which is less than unity, indicates that there is no significance in terms of differences. Tenth grade girls who fail to attend school regularly have the lowest means of 121.81 and tenth grade boys who fail to attend school regularly have a higher mean score (123.32) than tenth grade girls who attend school regularly and who have a mean score of 122.00. Bearing in mind that
TABLE 15.--Computer output in comparing achievement in total adjustment between regular and non-regular tenth grade students

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>Var</th>
<th>SD</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>124.28</td>
<td>487.46</td>
<td>22.078496</td>
<td>25</td>
</tr>
<tr>
<td></td>
<td>123.32</td>
<td>333.23</td>
<td>18.254496</td>
<td>25</td>
</tr>
<tr>
<td></td>
<td>122.00</td>
<td>843.58</td>
<td>29.014506</td>
<td>25</td>
</tr>
<tr>
<td></td>
<td>121.84</td>
<td>508.56</td>
<td>22.551200</td>
<td>25</td>
</tr>
</tbody>
</table>

Source

<table>
<thead>
<tr>
<th></th>
<th>Sum of Squares</th>
<th>DF</th>
<th>Mean Square</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between</td>
<td>100.10</td>
<td>3.0</td>
<td>33.36666</td>
</tr>
<tr>
<td>Within</td>
<td>52147.90</td>
<td>96.0</td>
<td>543.20729</td>
</tr>
<tr>
<td>Total</td>
<td>52248.00</td>
<td>99.0</td>
<td></td>
</tr>
</tbody>
</table>

there is no significant difference in the four groups, the arithmetic mean seems to indicate that boys (regular and non-regular) do better than girls in terms of total adjustment. Tenth grade girls who attend school regularly vary more in terms of total adjustment than any of the other three groups in the study. This degree of variation in total adjustment may be attributed to the various cultural and economic background to which the students are exposed, and the extent to which they have absorbed the many and varied experiences. Regular and non-regular tenth grade girls vary more in terms of total adjustment than regular and non-regular tenth grade boys.
Table 16 indicates the computer output for the analysis of variance between regular and non-regular tenth grade students enrolled at Tuskegee Institute.

### TABLE 16. --Computer output for the analysis of variance for IQ of regular and non-regular tenth grade students

<table>
<thead>
<tr>
<th>Mean</th>
<th>Var</th>
<th>SD</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>91.68000</td>
<td>230.226660</td>
<td>15.173221</td>
<td>25 regular boys</td>
</tr>
<tr>
<td>88.04000</td>
<td>118.873330</td>
<td>10.902904</td>
<td>25 non-regular boys</td>
</tr>
<tr>
<td>88.84000</td>
<td>133.306660</td>
<td>11.545850</td>
<td>25 regular girls</td>
</tr>
<tr>
<td>82.04000</td>
<td>133.290000</td>
<td>11.545128</td>
<td>25 non-regular girls</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Source</th>
<th>Sum of Squares</th>
<th>DF</th>
<th>Mean Square</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between</td>
<td>1232.03000</td>
<td>3.0</td>
<td>410.67666</td>
</tr>
<tr>
<td>Within</td>
<td>14776.72000</td>
<td>96.0</td>
<td>153.92416</td>
</tr>
<tr>
<td>Total</td>
<td>16008.75000</td>
<td>99.0</td>
<td></td>
</tr>
</tbody>
</table>

\[ F = 2.668045 \]

The "F" value needed for significance at the 5 per cent level is 2.59 with degrees of freedom 3 and 96. Having a "F" value of 2.67, then there is a significant difference between regular and non-regular tenth grade students in terms of IQ at Tuskegee Institute High School. Tenth grade regular boys have a higher IQ with a mean of 91.68 than tenth grade regular girls with a mean of 88.84. Non-regular tenth grade boys have a higher IQ with a mean of 88.04 than tenth grade non-regular girls.
with a mean of 82.01. Indications are that tenth grade non-regular girls are below average in terms of their IQ, assuming, of course, that the average IQ is 90 through 110. In general, it appears that regular tenth grade boys are brighter but at the same time they vary significantly greater among themselves than do any other group. The variance in terms of regular girls (133.31) and the variance among non-regular girls (133.29) are for all practical purposes and intent identical.

The researcher examined in some detail the overall performance in the four academic areas using the combined mean scores as a base from which to identify differences. Table 17 shows the combined means, mean, the variance and the standard deviation in terms of mathematics, intelligence quotient, science, social studies, and reading. Since academic performance is somewhat contingent on intelligence, the IQ will be useful in this table in making comparisons.

In finding the mean of the combined groups the researcher used the formula as given by Ferguson:

\[
\bar{x} \text{ (combine groups)} = \frac{n_1\bar{x}_1 + n_2\bar{x}_2 + \ldots + n_k\bar{x}_k}{N}
\]

The mean score of 25 boys who are regular attenders in mathematics, science, social studies and reading is therefore:

\[
\bar{x} \text{ (combined groups)} = \frac{(25 \times 295.06) + (25 \times 267.40) + (25 \times 265.16)}{100} + \frac{(25 \times 281.32)}{100} = 268.49
\]

TABLE 17.--Mean, variance, standard deviation and combined means, in four academic areas and IQ at Tuskegee Institute High School between regular and non-regular tenth grade students.

<table>
<thead>
<tr>
<th>Groupings</th>
<th>I.Q.</th>
<th>Mathematics</th>
<th>Science</th>
<th>Social Studies</th>
<th>Reading</th>
<th>Combined Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>25 Boys, Regular Attenders</td>
<td>91.68</td>
<td>230.23</td>
<td>15.17</td>
<td>259.08</td>
<td>316.11</td>
<td>17.79</td>
</tr>
<tr>
<td>25 Girls, Regular Attenders</td>
<td>88.61</td>
<td>133.31</td>
<td>11.55</td>
<td>253.32</td>
<td>287.48</td>
<td>16.96</td>
</tr>
<tr>
<td>25 Boys, Non-Regular Attenders</td>
<td>88.04</td>
<td>118.87</td>
<td>10.90</td>
<td>254.08</td>
<td>279.16</td>
<td>16.72</td>
</tr>
<tr>
<td>25 Girls, Non-Regular Attenders</td>
<td>82.04</td>
<td>133.29</td>
<td>11.55</td>
<td>244.51</td>
<td>216.25</td>
<td>14.71</td>
</tr>
<tr>
<td>Combined Mean for 50 Regular Attenders Boys and Girls</td>
<td>90.26</td>
<td>256.20</td>
<td>266.18</td>
<td>265.02</td>
<td>279.26</td>
<td></td>
</tr>
<tr>
<td>Combined Mean for 50 Non-Regular Attenders Boys and Girls</td>
<td>85.04</td>
<td>249.45</td>
<td>263.00</td>
<td>261.72</td>
<td>274.00</td>
<td></td>
</tr>
</tbody>
</table>
Using the same procedure, the combined means of regular boys and girls and the combined means of non-regular boys and girls were looked at in each of the four academic areas and the Intelligence Quotient as well. For example, the combined means of regular boys and girls in mathematics is:

\[
\bar{x} \text{ (Combined groups)} = \frac{(25 \times 259.08) + (25 \times 253.32)}{50} = 256.20
\]

Examining the table, it is clear that regular attenders boys and girls have a higher average IQ of 90.26 than do non-regular attenders boys and girls with an average IQ of 85.04. The difference here is \((90.26 - 85.04) = 5.22\) points in terms of IQ between tenth grade students who attend school regularly and tenth grade students who fail to attend school regularly at Tuskegee Institute High School.

Regular attenders score consistently higher in each academic area than do non-regular attenders. The question may be asked here, do they score higher because they have a higher IQ or do they score higher because they attend school regularly. Before any attempt is made to draw an inference here, the researcher wishes to draw to the attention of the reader the combined means in the four academic areas. In mathematics, science, social studies, and reading, the combined mean scores in terms of performance for regular attenders boys and girls are 268.49 and 265.24 respectively, and for non-regular attenders boys and girls the combined mean scores are 264.53 and 259.54 respectively. These group means tend to indicate that the difference in performance is not due to attendance, but rather to IQ. For example, tenth grade girls who attend school regularly and have an average IQ of 88.84 have an overall
average performance of 265.24; tenth grade boys who fail to attend school regularly with an average IQ of 88.04 have an overall average performance of 264.53. The difference here in terms of average IQ is (88.84 - 88.04) 0.80, the difference in terms of overall performance is (265.24 - 264.53) 0.71. For all practical purposes, since the difference is less than unity, the researcher infers that there is no difference in overall performance of tenth grade girls who attend school regularly and tenth grade boys who fail to attend school regularly. Attendance here had nothing to do with performance in the two groups. They had similar IQ; they perform similarly in all four academic areas.

Briefly, examining the overall performance of tenth grade boys who attend school regularly, it can be observed in Table 17 that they have an average IQ of 91.68 and an average performance in the four academic areas of 268.49. Non-regular tenth grade boys with an average IQ of 88.04 have an average performance of 265.53.

The difference here in terms of average performance is (268.49 - 265.53) 2.96, and the difference in terms of average IQ is (91.68 - 88.04) 3.64. The researcher infers that the difference in terms of overall average performance is a function of the IQ and not a function of attendance. It must be reiterated here that boys who fail to attend school regularly with an IQ of 88.04 perform as well as girls who attend school regularly with an IQ of 88.84. While this study was not designed to investigate the challenging effect of the school's curriculum, it is an unavoidable question coming from the results of this study.
Parent Educational Level

Table 18 indicates the computer output for the comparison of parent educational level with performance of regular and non-regular tenth grade students in four academic areas at Tuskegee Institute High School.

### TABLE 18. Computer output of the comparison of parent educational level with performance of regular and non-regular tenth grade students in four academic areas

<table>
<thead>
<tr>
<th>Mean</th>
<th>Var</th>
<th>SD</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>259.0909</td>
<td>52.272727</td>
<td>7.229988</td>
<td>33</td>
</tr>
<tr>
<td>231.1764</td>
<td>86.029411</td>
<td>9.275204</td>
<td>17</td>
</tr>
<tr>
<td>261.5789</td>
<td>36.257309</td>
<td>6.021401</td>
<td>19</td>
</tr>
<tr>
<td>227.0967</td>
<td>61.290322</td>
<td>7.828813</td>
<td>31</td>
</tr>
<tr>
<td>256.2000</td>
<td>304.244890</td>
<td>17.442617</td>
<td>50</td>
</tr>
<tr>
<td>249.4400</td>
<td>264.620400</td>
<td>16.267157</td>
<td>50</td>
</tr>
<tr>
<td>266.4800</td>
<td>108.253060</td>
<td>10.440473</td>
<td>50</td>
</tr>
<tr>
<td>262.9800</td>
<td>112.346930</td>
<td>10.599383</td>
<td>50</td>
</tr>
<tr>
<td>265.0200</td>
<td>96.142857</td>
<td>9.805246</td>
<td>50</td>
</tr>
<tr>
<td>261.7200</td>
<td>91.755102</td>
<td>9.578888</td>
<td>50</td>
</tr>
<tr>
<td>279.2600</td>
<td>147.216320</td>
<td>12.133273</td>
<td>50</td>
</tr>
<tr>
<td>274.0000</td>
<td>113.714280</td>
<td>10.663689</td>
<td>50</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Source</th>
<th>Sum of Squares</th>
<th>DF</th>
<th>Mean Square</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between</td>
<td>86234.000000</td>
<td>11</td>
<td>7839.45450</td>
</tr>
<tr>
<td>Within</td>
<td>66219.000000</td>
<td>488</td>
<td>135.69467</td>
</tr>
<tr>
<td>Total</td>
<td>152453.000000</td>
<td>499</td>
<td></td>
</tr>
</tbody>
</table>

\[ F = 57.772751 \]
Before attempting to discuss the data appearing in Table 18, it should be made clear that parents who are classified as having high education are those with college credits, bachelors, and masters degrees. For purposes of this analysis, they were ranked 250, 260, and 270 respectively. Parents who are classified as having low education are those with zero years of formal schooling, elementary school graduates and high school graduates. For purposes of this analysis, they were ranked 220, 230, and 240 respectively. The one parent having the highest educational level in the family was used in each case.

Having an F value of 57.77 with degrees of freedom 11 and 488, there is a significant difference at the 1 per cent level in terms of performance of tenth grade students who have parents with high educational level and tenth grade students who have parents with low educational level. Tenth grade students having parents with low educational level not only perform lower than other tenth grade students but tend to attend school less frequently. Examining the table, it can be observed that of the fifty parents who have tenth grade children attending school regularly, thirty-three had a high educational level and seventeen had a low educational level. It is of interest to note that the performance of those fifty children in mathematics, science, social studies and reading is 256.20, 266.48, 265.02, and 279.26 respectively. Of the fifty parents who have tenth grade children attending school non-regularly, thirty-one had a low educational level and nineteen a high educational level.

Table 19 simplifies and indicates the mean educational level of parents and the performance of regular and non-regular tenth grade students.
### TABLE 19. Average educational level of parents and performance of regular and non-regular tenth grade students in four academic areas

<table>
<thead>
<tr>
<th>Parents Grouping</th>
<th>Average Educational Level of Parents</th>
<th>Children's Average Performance in Four Academic Areas</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Mathematics</td>
</tr>
<tr>
<td>Parents with children who are regular attenders</td>
<td>249.60</td>
<td>256.20</td>
</tr>
<tr>
<td>Parents with children who are non-regular attenders</td>
<td>240.20</td>
<td>249.44</td>
</tr>
</tbody>
</table>

Parents with high educational level seem to produce children who perform better than children coming from parents with low educational level. In addition, children coming from parents with high educational level attend school regularly as compared to children coming from parents with low educational level. The effects of the environment in the home and parents' expectations of their children are two intervening variables which could not be measured but which obviously have some effect on performance and attendance.
CHAPTER III

SUMMARY, FINDINGS, CONCLUSIONS, IMPLICATIONS,
AND RECOMMENDATIONS

Introduction

Rationale.—It was assumed that students who failed to attend high school regularly were not likely to achieve academically and socially as well as students who attended regularly. How often a tenth grade student could absent himself from class without its reflecting on his grades, his achievement and his total adjustment, was one of the questions on which this study proposed to give some insights. The many attendant factors which can influence academic achievement and social adjustment must be examined. Attendant factors such as educational level of parents, and the student's own ability must be investigated to determine the true effects of absenteeism on academic achievement and social adjustment. A student who was continuously absent but who was exposed to an educated parent and was continuously involved in cultural activities would not feel the effects of absenteeism on his academic achievement as much as a student who was absent and who was not culturally and academically exposed.

Evolution of the problem.—Over the years this writer became increasingly concerned as to what were the identifiable relationships in Macon County, Alabama, in the setting briefly described between school attendance, academic achievement and the educational level of
the families. From this writer's point of view, it was unrealistic to assume that any one variable or combination of variables were accountable for poor attendance, low school achievement, and poor personal and social adjustment. There were too many intervening variables involved which did not lend themselves to accurate measurement but which certainly would permit for meaningful inferences to be drawn after an analysis of all the relevant data that could be and were being collected.

Contribution to educational knowledge.--This study will provide a base for the counseling and guidance services at Tuskegee Institute High School and all other high schools having students with similar characteristics.

Statement of the problem.--This investigation was concerned with an analysis of school attendance, academic achievement and certain intervening factors affecting a sample of tenth grade students at Tuskegee Institute High School, Tuskegee, Alabama.

Purpose of the study.--The broad and fundamental purpose of this study was to analyze school attendance, academic achievement and certain intervening factors affecting a sample of tenth grade students at Tuskegee Institute High School. Specifically, this investigation sought to relate absenteeism to academic achievement, personal adjustment, social adjustment, educational level of parents, and intelligence. Upon completion of this investigation, very meaningful statements were made as to the effects of absenteeism on students.

Method of research.--The research method used in this study was the descriptive method, utilizing standardized instruments.
Locale of study.--This study was conducted during the 1964-65 academic year at Tuskegee Institute High School, Tuskegee, Alabama.

Limitations of the study.--This study was confined to tenth grade students at Tuskegee Institute High School in Tuskegee, Alabama. The most limiting factor in this investigation was the human element which did not permit itself for accurate measurements outside the realm of a tightly-structured setting.

Summary of Related Literature

A summary of related literature will include reasons given for poor attendance, achievement, adjustment, intelligence, and parents' educational level.

Reasons given for poor attendance.--Many findings in studies of school attendance in high schools showed that reasons given for absences from school were: poor grades, broken homes, dislike for teachers, and dislike for subjects and employment.

Achievement.--Investigators found when investigating factors associated with absenteeism in schools that best attenders earned higher school marks than did worst attenders.

Adjustment.--Many studies revealed, after making an inquiry into the attendance services in schools, that frequent absence from school was symptomatic of maladjustment of various types and forms.

Intelligence.--Investigators were not in agreement concerning the importance of intelligence as a factor in dropping out of school. Some studies found that intelligence was not particularly important, while others showed that low scholastic aptitude was one of the characteristics of the potential dropout.
Parents' educational level.—Researchers found that those whose parents had some college work did not drop out; those whose parents completed high school dropped out to the smallest extent; next ranked parents with eight years of school, parents with one to four years of school (largest proportion of dropouts).

Findings, Conclusions and Implications

This section will treat each hypothesis individually and will cite implications.

Hypothesis 1

There is no significant difference in academic achievement between regular and non-regular tenth grade students at Tuskegee Institute High School, Tuskegee, Alabama.

Findings.—There was a significant difference in terms of performance in the four academic areas (mathematics, science, social studies and reading) between fifty regular tenth grade students and fifty non-regular tenth grade students. The difference was at the 1 per cent level and was in favor of the regular attenders who scored consistently higher than the non-regular attenders. In examining each area independently, the researcher found a significant difference at the 5 per cent level in mathematics. This was in favor of regular attenders and was more so in favor of the tenth grade boys who attended school regularly. There was no significant difference in performance between regular and non-regular tenth grade students in science. There was no significant difference in terms of performance in social studies
between regular and non-regular tenth grade students. In reading, there was a significant difference at the 5 per cent level between regular and non-regular tenth grade students.

**Conclusion.**—Regular boy attenders scored higher in mathematics. Tenth grade boys who attended school regularly scored higher in science than tenth grade girls who attended school regularly. Regular attenders scored higher than non-regular attenders but the difference was not sufficiently great to be significant. Regular attenders scored higher in social studies than non-regular attenders, but here again the difference was too small to be significant. In reading, regular attenders scored higher than non-regular attenders.

**Implications.**—One may imply here that regular tenth grade students in mathematics have been exposed to more mathematical concepts than non-regular tenth grade students.

Since there was a significant difference in academic achievement between regular and non-regular tenth grade students then the null hypothesis is accepted.

**Hypothesis 2**

There is no significant difference in personal adjustment between regular and non-regular tenth grade students at Tuskegee Institute High School, Tuskegee, Alabama.

**Findings.**—There is no significant difference in terms of personal adjustment between regular and non-regular tenth grade students at Tuskegee Institute High School.

**Conclusions.**—Regular tenth grade boys and girls scored slightly higher than non-regular boys and girls.
Implications.--Tuskegee Institute High School is apparently doing a fair job in teaching tenth grade girls personal adjustment. Since there was no significant difference in personal adjustment between regular and non-regular tenth grade students the null hypothesis is accepted.

Hypothesis 3
There is no significant difference in social adjustment between regular and non-regular tenth grade students at Tuskegee Institute High School, Tuskegee, Alabama.

Findings.--There is no significant difference in terms of social adjustment between regular and non-regular tenth grade students at Tuskegee Institute High School. The findings from this hypothesis are, however, very revealing.

Conclusion.--Tenth grade girls who failed to attend school regularly are more socially adjusted than all other groups.

Implications.--The implications here are in direct confrontation with what the school thinks it might be doing in the area of social adjustment for tenth grade students who attend school regularly. The basic and fundamental implication is that the school does not provide the child with a sufficiently wide variety of experiences in the area of social adjustment. Being out of school is an advantage to girls, in particular, who expect to be socially adjusted.

Since there was no significant difference in social adjustment between regular and non-regular tenth grade students then the null hypothesis is accepted.
Hypothesis 4

There is no significant difference in terms of attendance and achievement among tenth grade students at Tuskegee Institute High School regardless of their intelligence.

Findings.--There is a significant difference at the 5 per cent level in terms of Intelligence Quotient. The difference is in favor of regular attenders. An examination of Table 17, on page 46, indicates the mean scores in four academic areas as well as the combined means. When these mean scores are related to the mean scores for the Intelligence Quotient the implications in this study are challenging.

Conclusion.--Two basic facts stand out: (1) Regular attenders score consistently higher than non-regular attenders, and (2) regular attenders have a higher average Intelligence Quotient than do non-regular attenders.

Implications.--Do regular attenders achieve more because they are in school more often? Do regular attenders achieve more because they have a higher Intelligence Quotient? Indications are that regular attenders achieve more because they have a higher Intelligence Quotient and not because they are in school regularly.

Since there was a significant difference in achievement and attendance between regular and non-regular tenth grade students regardless of intelligence, then the null hypothesis is rejected.

Hypothesis 5

There is no significant difference in academic achievement between regular and non-regular tenth grade students at Tuskegee
Institute High School, Tuskegee, Alabama, regardless of their parent's educational achievement.

Findings.--There is a significant difference at the 1 per cent level in terms of performance of tenth grade students who have parents with high educational level and tenth grade students who have parents with low educational level.

Conclusions.--Tenth grade students having parents with low educational level not only perform lower than other tenth grade students but tend to attend school less frequently. Of the fifty parents having tenth grade children attending school regularly, thirty-three had a high educational level and seventeen had a low educational level. Of the fifty parents having tenth grade children attending school non-regularly, thirty-one had a low educational level and nineteen had a high educational level.

Implications.--Parents with high educational level seem to produce children who perform better than children coming from parents with low educational level. The effects of the environment in the home and parents' expectations of their children are two intervening variables which could not be measured but which obviously have some effect on performance and attendance.

Since there was a significant difference in academic achievement between regular and non-regular tenth grade students regardless of their parents' educational achievement, then the null hypothesis is rejected.
Recommendations

This section of the chapter will treat recommendations as they are warranted in terms of the findings and conclusions of this study.

1. Since regular tenth grade students in science and social studies do not perform significantly higher than tenth grade students who fail to attend school regularly, the program in these two areas should be examined and maybe enriched or improved.

2. The reading program, in which there was a significant difference at the 5 per cent level can also be improved and made more challenging to regular attenders.

3. To meet the academic needs of the tenth grade students and to make the school a more compatible institution for non-regular attenders, a comprehensive counseling and guidance program should be initiated early.

4. The school must exert itself in such a manner that its influence is felt by the students in the area of personal adjustment.

5. Since the total education of the child is as much the responsibility of the home as it is the responsibility of the school, it is the school responsibility to identify the areas of education in which the home is lacking and take up from there.

6. The school should make every effort to identify potential faculty members who are likely to make significant contributions in the areas most needed.

7. The school should provide the experiences necessary for the social adjustment of its pupils.

8. Since social adjustment is an integral part of growing up and since success in many fields of endeavor is in part a function of social adjustment, the school should make it a priority in their organizational structure.

9. Since regular tenth grade students with parents of high educational level tend to perform
significantly higher than tenth grade irregular students with parents of low educational level, Tuskegee Institute High School should provide a more vitalized and enriched program of instruction for those tenth grade regular students who can actively profit from this instruction.

10. A stimulating program accentuating specific academic needs with a minimum of requirement should be provided for those non-regular tenth grade students with parents of low educational level.

11. A more comprehensive testing program should be initiated at Tuskegee Institute High School so that both regular and non-regular attenders may have adequate appraisal of their progress and that a suitable program of instruction may be provided that best meets their needs.
HISTORY

Books


Articles and Periodicals


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Non-Regular Attendance Group of Pupils." Unpublished Master's
APPENDICES
VITA

MILDRED VIRGINIA WHITE

Education: B.S., Tuskegee Institute, Tuskegee, Alabama (Physical Education), 1948; Secondary Education, Tuskegee Institute, Summer School, 1953; Guidance and Counseling, Tuskegee Institute, 1960; NDEA Guidance and Counseling, Atlanta University, 1964-65, working toward Master of Arts Degree in Guidance and Counseling.

Experience: Teacher of health and physical education, 1950-1964, Macon County Training School, Roba, Alabama.

Personal Information: Married, two children; Member of the American Personnel and Guidance Association, National Vocational Guidance Association, American School Counselor Association, Alabama Teachers Association, Phi Delta Kappa Sorority.
# California Test of Personality

**1953 Revision**

Devised by
**ERNEST W. TIEGS, WILLIS W. CLARK, AND LOUIS P. THORPE**

**APPENDIX A**

**Secondary • GRADES • form AA**

9 to College

**not write or mark on this booklet unless told to do so by the examiner.**

<table>
<thead>
<tr>
<th>Sex</th>
<th>Grade</th>
<th>Last</th>
<th>First</th>
<th>Middle</th>
<th>City</th>
<th>Date of Test</th>
<th>Student's Age</th>
<th>Date of Birth</th>
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**INSTRUCTIONS TO STUDENTS:**

This booklet contains some questions which can be answered YES or NO. Your answers will show what you usually think, how you usually feel, or what you usually do about things. Work as fast as you can without making mistakes.

**DO NOT TURN THIS PAGE UNTIL TOLD TO DO SO.**
INSTRUCTIONS TO STUDENTS

DO NOT WRITE OR MARK ON THIS TEST BOOKLET UNLESS TOLD TO DO SO BY THE EXAMINER.

You are to decide for each question whether the answer is YES or NO and mark it as you are told. The following are two sample questions:

SAMPLES
A. Do you have a dog at home? YES NO
B. Can you drive a car? YES NO

DIRECTIONS FOR MARKING ANSWERS

ON ANSWER SHEETS
Make a heavy black mark under the word YES or NO, whichever shows your answer. If you have a dog at home but cannot drive a car, you would mark the answer sheet this way:

A | YES
B | NO

Mark under the word that shows your answer. Find answer row number 1 on your answer sheet. Now wait until the examiner tells you to begin.

ON TEST BOOKLETS
Draw a circle around the word YES or NO, whichever shows your answer. If you have a dog at home, draw a circle around the word YES in Sample A above; if not, draw a circle around the word NO. Do it now.

If you can drive a car, draw a circle around the word YES in Sample B above; if not, draw a circle around the word NO. Do it now.

Now wait until the examiner tells you to begin.

After the examiner tells you to begin, go right on from one page to another until you have finished the test or told to stop. Work as fast as you can without making mistakes. Now look at item 1 on page 3.
SECTION 1 A

Do you often act as leader when working with other people? YES NO

Is it easy for you to introduce or be introduced to people? YES NO

Do you find it hard to keep from being bossed by people? YES NO

Is it hard for you to continue with your work when it becomes difficult? YES NO

Do you give considerable thought to your future work or career? YES NO

Do you take an active part in making decisions when with other people? YES NO

Is it easier to do things that your friends propose than to make your own plans? YES NO

Do you usually do things that are good for you even if you do not like them? YES NO

Is it hard for you to admit when you are wrong? YES NO

Do you usually keep at your plans until they are finished? YES NO

Do you feel uncomfortable when you are alone with important people? YES NO

Do you prefer some competition to working alone in your own way? YES NO

Is it easy for you to wait until the appropriate time to do things? YES NO

Do you usually get discouraged when other people disagree with you? YES NO

Is it natural for you to feel like crying or pitying yourself whenever you get hurt? YES NO

GO RIGHT ON TO THE NEXT COLUMN

SECTION 1 B

16. Do your friends seem to think you have likable traits? YES NO

17. Do people seem to think that you are dependable? YES NO

18. Do you feel that you are not very good at handling money? YES NO

19. Do you feel that people often treat you rather badly? YES NO

20. Are you often invited to parties that both boys and girls attend? YES NO

21. Do most of your friends and classmates do nice things for you? YES NO

22. Do your folks seem to think that you are going to amount to something? YES NO

23. Do people seem to think well of your family's social standing? YES NO

24. Are you usually considered brave or courageous? YES NO

25. Are you considered a failure in many of the things you do? YES NO

26. Are you often discouraged because people fail to recognize your worth? YES NO

27. Do your friends seem to think that your ideas are usually poor? YES NO

28. Do you feel that people recognize your social standing as they should? YES NO

29. Are you usually given credit for the good judgment you show? YES NO

30. Do members of the opposite sex seem to like you? YES NO

GO RIGHT ON TO THE NEXT PAGE

Section 1 A (number right) _____________________________

Section 1 B (number right) _____________________________
SECTION 1 C

31. Do you have enough time for play or recreation?  YES  NO
32. Do your parents cause you embarrassment when you associate with the opposite sex?  YES  NO
33. Are you scolded for many little things that do not amount to much?  YES  NO
34. Do you frequently have to stand up for your freedom or other rights?  YES  NO
35. Do you work to earn part or all of your spending money?  YES  NO
36. Do you frequently have to ask for more freedom?  YES  NO
37. Do some people try to dominate you so much that you have to resist them?  YES  NO
38. Are you allowed to say what you believe about things?  YES  NO
39. Do your folks often try to stop you from going around with your friends?  YES  NO
40. Do you have to do what other people tell you to do most of the time?  YES  NO
41. Do you feel that you are bossed around too much by your folks?  YES  NO
42. Are you usually allowed to attend the socials or shows that you like?  YES  NO
43. Do you feel that you are given enough liberty to do what you want to do?  YES  NO
44. Do you sometimes go out with members of the opposite sex?  YES  NO
45. Are you free to go to interesting places during your spare time?  YES  NO

SECTION 1 D

46. Do you feel that you fit well into the community in which you live?  YES
47. Do you often worry about your lack of true friendships?  YES
48. Do you feel that your relatives are as attractive and successful as those of your friends?  YES
49. Do you feel that your classmates are glad to have you as a member of their school?  YES
50. Do the people at home make you feel that you are an important part of the family?  YES
51. Are you regarded as being as healthy and strong as most of your friends and classmates?  YES
52. Have you often wished that you had different parents than you have?  YES
53. If you are a young man, are you liked by the young women? If you are a young woman, do the young men like you?  YES
54. Have you found it difficult to make as many friends as you wish?  YES
55. Are you well enough liked at home that you feel happy there?  YES
56. Are you invited to groups in which both young men and women are present?  YES
57. Do you have enough friends to make you feel good?  YES
58. Do you feel that you are an important part of your school?  YES
59. Do your friends and acquaintances seem to have a better time at home than you do?  YES
60. Do you feel that people usually think well of you?  YES
### SECTION 1 E

<table>
<thead>
<tr>
<th>Question</th>
<th>Yes</th>
<th>No</th>
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</thead>
<tbody>
<tr>
<td>Are people frequently so unkind or unfair to you that you feel like crying?</td>
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<tr>
<td>Do you find it difficult to associate with the opposite sex?</td>
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<tr>
<td>Do you find that many people seem perfectly willing to take advantage of you?</td>
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<tr>
<td>Do you have many problems that cause you a great deal of worry?</td>
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<tr>
<td>Do you find it hard to meet people at social affairs?</td>
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<tr>
<td>Are your responsibilities and problems often such that you cannot help but get discouraged?</td>
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<tr>
<td>Do you often feel lonesome even when you are with people?</td>
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<tr>
<td>Have you found that a good many people are hard to like?</td>
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<td>Do you find many people inclined to say and do things that hurt your feelings?</td>
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<tr>
<td>Are you sorry that you are continually growing older?</td>
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<tr>
<td>Do you find it difficult to overcome the feeling that you are inferior to others?</td>
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<tr>
<td>Is it hard for you to forget humiliating experiences?</td>
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<tr>
<td>Does it seem to you that younger persons have an easier and more enjoyable life than you do?</td>
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<td>Do you often feel that people do not appreciate you or treat you as they should?</td>
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<tr>
<td>Are certain people so unreasonable that you can’t help but hate them?</td>
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### SECTION 1 F

<table>
<thead>
<tr>
<th>Question</th>
<th>Yes</th>
<th>No</th>
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<tbody>
<tr>
<td>Are you likely to stutter when you get worried or excited?</td>
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<td>Are you bothered by periodic dizzy spells?</td>
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<td>Do you have the habit of biting your fingernails?</td>
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<td>Do you have frequent headaches for which there seems to be no cause?</td>
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<tr>
<td>Do you sometimes walk or talk in your sleep?</td>
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<td>Do you suffer often from annoying eyestrain?</td>
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<td>Is it hard for you to sit still?</td>
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<td>Are you more restless than most people?</td>
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<tr>
<td>Are you inclined to drum restlessly with your fingers on tables, desks, and chairs?</td>
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<td>Do people frequently speak so indistinctly that you have to ask them to repeat what they have said?</td>
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<tr>
<td>Do you lose a great deal of sleep because of worry?</td>
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<td>Do you find that you are tired a great deal of the time?</td>
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<tr>
<td>Do you often have considerable difficulty in going to sleep?</td>
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<td>Do you sometimes have nightmares?</td>
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<td>Do your muscles twitch some of the time?</td>
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</tbody>
</table>

Go right on to the next page.
### SECTION 2 A

<table>
<thead>
<tr>
<th>Question</th>
<th>YES</th>
<th>NO</th>
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<tbody>
<tr>
<td>91. Is it all right to create a scene in order to get your own way?</td>
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<td>92. Does finding an article give a person the right to keep or sell it?</td>
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<tr>
<td>93. Is it all right to ignore teachers’ requests if they appear to be unfair?</td>
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<td>94. If they look funny enough, is it all right to laugh at people who are in trouble?</td>
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<tr>
<td>95. Should students follow their parents’ instructions even though their friends advise differently?</td>
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<td>96. Is it always necessary to express appreciation for help or favors?</td>
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<td>97. Should one respect the property of people who are very rich?</td>
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<td>98. Is it necessary to be especially friendly to new students?</td>
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<td>99. If you need something badly enough and cannot buy it, are there times when it is all right to take it?</td>
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<tr>
<td>100. Is it all right to cheat in a game when you will not get caught?</td>
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<td>101. Is it necessary to obey “No Trespassing” signs?</td>
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<td>102. Should a person be courteous to disagreeable people?</td>
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<td>103. Are the beliefs of some people so absurd that it is all right to make fun of them?</td>
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<td>104. Do older or elderly people deserve any special help not given others?</td>
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<td>105. Do rich people deserve better treatment than poor ones?</td>
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</table>

### SECTION 2 B

<table>
<thead>
<tr>
<th>Question</th>
<th>YES</th>
<th>NO</th>
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<tbody>
<tr>
<td>106. Do you often introduce people to each other?</td>
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<td>107. Do you find that many people are easily offended by you?</td>
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<td>108. Is it easy for you to talk with people as soon as you meet them?</td>
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<td>109. Is it difficult for you to compliment people when they do something well?</td>
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<td>110. Do you often assist in planning parties?</td>
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<td>111. Do you usually remember the names of people you meet?</td>
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<td>112. Do you frequently find it necessary to disregard the feelings of other people?</td>
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<td>113. Do you frequently find it necessary to interrupt a conversation?</td>
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<td>114. Do you attempt new games at parties even when you haven’t played them before?</td>
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<tr>
<td>115. Do you find that it causes you trouble when you help others?</td>
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<tr>
<td>116. Do you have many friends rather than just a few?</td>
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<tr>
<td>117. Do you find that members of the opposite sex appear at ease when chatting with you?</td>
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<tr>
<td>118. Do you like to have parties at your home?</td>
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<tr>
<td>119. Do you find it hard to help others have a good time at parties?</td>
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<tr>
<td>120. Is it hard for you to lead in enlivening a dull party?</td>
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</tbody>
</table>
SECTION 2 C

Are you justified in taking things that are denied you by unreasonable people?  YES NO

Have things ever been so bad at home that you have had to run away?  YES NO

Are you often forced to show some temper in order to get what is coming to you?  YES NO

Do you often have to make your classmates do things that they don't want to do?  YES NO

Are people often so stubborn that you have to call them bad names?  YES NO

Do you find it easy to get out of trouble by telling "white lies"?  YES NO

Do people often provoke you to the point where you feel justified in swearing?  YES NO

Are some people so unfair that you are justified in being sarcastic to them?  YES NO

Are many people so narrow-minded that they force you to quarrel with them?  YES NO

Are teachers and other people often so unfair that you do not obey them?  YES NO

Do you often have to fight or quarrel in order to get your rights?  YES NO

Are people often so thoughtless of you that you have a right to be spiteful to them?  YES NO

Do little "kids" often get in your way so that you have to push or frighten them?  YES NO

Are people at home or at school always bothering you so that you just have to quarrel?  YES NO

Do you have to stand up for your rights?  YES NO

SECTION 2 D

136. Are you troubled because your parents are not congenial?  YES NO

137. Do the members of your family frequently have good times together?  YES NO

138. Do your folks take time to become acquainted with your problems?  YES NO

139. Does someone at home like to have you bring your friends to the house?  YES NO

140. Are things difficult for you because your folks are usually short of money?  YES NO

141. Are you troubled because your folks differ from you regarding the things you like?  YES NO

142. Do you like your parents about equally?  YES NO

143. Do you wish that more affection were shown by more members of your family?  YES NO

144. Do your folks appear to doubt whether you will be successful?  YES NO

145. Do the members of your family seem to criticize you a lot?  YES NO

146. Do you usually like to be somewhere else than at home?  YES NO

147. Do you avoid inviting others to your home because it is not as nice as theirs?  YES NO

148. Do some of those at home seem to think they are better than you?  YES NO

149. Are your folks reasonable to you when they demand obedience?  YES NO

150. Do you sometimes feel like leaving your home for good?  YES NO
### SECTION 2 E

<table>
<thead>
<tr>
<th>Question</th>
<th>Yes</th>
<th>No</th>
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<tbody>
<tr>
<td>151. Are you usually a member of a club, team, or other organization at school?</td>
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<tr>
<td>152. Are your classmates usually friendly to you?</td>
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<tr>
<td>153. Would you like to be chosen more often to take part in games and other activities?</td>
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<td>154. If it were right, would you stay away from school as often as possible?</td>
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<td>155. Do you find that classmates of the opposite sex are as nice as those of your own sex?</td>
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<tr>
<td>156. Would you be happier if your classmates liked you better?</td>
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<td>157. Does it seem to you that many of your teachers are nervous?</td>
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<td>158. Do many of the teachers seem to be unfair or unreasonable to their students?</td>
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<tr>
<td>159. Do you like to go to school affairs with members of the opposite sex?</td>
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<tr>
<td>160. Would you and your classmates like school better if teachers were not so strict?</td>
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<tr>
<td>161. Do you enjoy being alone more than being with your classmates?</td>
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<tr>
<td>162. Do you find that you can confide in at least one of your teachers?</td>
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<tr>
<td>163. Are many of your classmates so unkind or unfriendly that you avoid them?</td>
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<tr>
<td>164. Do your classmates seem to approve of the way you treat them?</td>
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<tr>
<td>165. Do you feel that some teachers prefer other students to you?</td>
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**GO RIGHT ON TO THE NEXT COLUMN**

### SECTION 2 F

<table>
<thead>
<tr>
<th>Question</th>
<th>Yes</th>
<th>No</th>
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<tbody>
<tr>
<td>166. Are there any attractive members of the opposite sex in your neighborhood?</td>
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<tr>
<td>167. Do you like to take care of your own or some neighbor’s pets?</td>
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<tr>
<td>168. Do you dislike taking responsibility for the welfare or safety of children or old people?</td>
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<tr>
<td>169. Do you know people who are so annoying that you would like to molest them?</td>
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<tr>
<td>170. Do you often play games with friends in your neighborhood?</td>
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<tr>
<td>171. Is there a church or other organization in your neighborhood where you meet congenial people?</td>
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<tr>
<td>172. Are there people of certain races that one should not be expected to tolerate?</td>
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<tr>
<td>173. Do you live in a rather uninteresting neighborhood?</td>
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<tr>
<td>174. Are the police officers of such a character that you would like to help them?</td>
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<tr>
<td>175. Do you visit with several young men and women in your neighborhood?</td>
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<tr>
<td>176. Do you sometimes go to neighborhood affairs with members of the opposite sex?</td>
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<tr>
<td>177. Do you ever do anything to improve the appearance of your home surroundings?</td>
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<tr>
<td>178. For the most part, are your neighbors the kind of people you like?</td>
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<tr>
<td>179. Are most of the people in your community the kind you refrain from visiting?</td>
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<tr>
<td>180. Do you usually speak to both young men and young women in your neighborhood?</td>
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</table>

**STOP NOW WAIT FOR FURTHER INSTRUCTIONS**
Read this page. Do what it tells you to do.

Do not open this booklet, or turn it over, until you are told to do so.
Fill these blanks, giving your name, age, birthday, etc. Write plainly.

Name ........................................ Age last birthday ...... years
First name, initial, and last name
Birthday ................................ Teacher ............ Date ............... 19.....
Month Day
Grade ......................... School ......................... City

This is a test to see how well you can think. It contains questions of different kinds. Here are three sample questions. Five answers are given under each question. Read each question and decide which of the five answers below it is the right answer.

Sample a: Which one of the five things below is soft?

1 glass 2 stone 3 cotton 4 iron 5 ice

The right answer, of course, is cotton; so the word cotton is underlined. And the word cotton is No. 3; so a heavy mark has been put in the space under the 3 at the right. This is the way you are to answer the questions.

Try the next sample question yourself. Do not write the answer; just draw a line under it and then put a heavy mark in the space under the right number.

Sample b: A robin is a kind of —

6 plant 7 bird 8 worm 9 fish 10 flower

The answer is bird; so you should have drawn a line under the word bird, and bird is No. 7; so you should have put a heavy mark in the space under the 7. Try this one:

Sample c: Which one of the five numbers below is larger than 55?

1 63 2 48 3 29 4 57 5 16

The answer, of course, is 57; so you should have drawn a line under 57, and that is No. 14; so you should have put a heavy mark in the space under the 14.

The test contains 80 questions. You are not expected to be able to answer all of them, but do the best you can. You will be allowed half an hour after the examiner tells you to begin. Try to get as many right as possible. Be careful not to go so fast that you make mistakes. Do not spend too much time on any one question. No questions about the test will be answered by the examiner after the test begins. Lay your pencil down.

Do not turn this booklet until you are told to begin.
### Answer Sheet

#### Page 6

<table>
<thead>
<tr>
<th>66</th>
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#### Page 5

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#### Page 4

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#### Page 3

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</table>

Note: This Answer Sheet is not intended for machine scoring.
1. The opposite of hate is —
   ① enemy  ② fear  ③ love  ④ friend  ⑤ joy

2. If 2 pencils cost 5 cents, how many pencils can be bought for 50 cents?
   ⑥ 100  ⑦ 10  ⑧ 20  ⑨ 25  ⑩ 5

3. A dog does not always have —
   ⑪ eyes  ⑫ bones  ⑬ a nose  ⑭ a collar  ⑮ lungs

4. A recollection that is indefinite and uncertain may be said to be —
   ⑮ forgotten  ⑮ secure  ⑮ vague  ⑮ imminent  ⑮ fond

5. Which of these words would come first in the dictionary?
   ⑰ more  ⑱ pile  ⑲ mist  ⑳ pick  ㉑ mine

6. A fox most resembles a —
   ② pig  ③ goat  ④ wolf  ⑤ tiger  ⑥ cat

7. Gold is more costly than silver because it is —
   ③ heavier  ③ scarcer  ⑤ yellower  ⑤ harder  ⑤ prettier

8. The first drawing below is related to the second in the same way that the third one is to one of the remaining four. Which one?

9. A radio is related to a telephone in the same way that (?) is to a railroad train.
   ⑥ a highway  ⑦ an air plane  ⑧ gasoline  ⑨ speed  ⑩ noise

10. The opposite of wasteful is —
    ④ wealthy  ⑤ quiet  ⑤ stingy  ⑤ economical  ⑤ extravagant

11. A debate always involves —
    ① an audience  ⑦ judges  ③ a prize  ④ a controversy  ⑤ an auditorium

12. A party consisted of a man and his wife, his two sons and their wives, and four children in each son's family. How many were there in the party?
    ⑦ 7  ⑧ 8  ⑨ 12  ⑩ 13  ⑪ 14

13. One number is wrong in the following series.
    1  5  2  6  3  7  4  9  5  9
What should that number be?
    ⑨ 9  ⑩ 7  ⑥ 8  ④ 10  ⑥ 5

14. A school is most likely to have —
    ⑥ maps  ⑦ books  ⑤ a janitor  ⑤ a teacher  ⑦ a blackboard

15. What letter in the word WASHINGTON is the same number in the word (counting from the beginning) as it is in the alphabet?
    ③ A  ⑤ N  ⑦ G  ⑨ T  ⑪ O

16. Which word makes the truest sentence? Fathers are (?) wiser than their sons.
    ③ always  ⑤ usually  ④ much  ⑦ rarely  ⑬ never

17. Four of these five things are alike in some way. Which one is not like the other four?
    ① nut  ② turnip  ③ rose  ① apple  ⑤ potatoes

18. The opposite of frequently is —
    ③ occasionally  ⑥ seldom  ⑦ never  ⑨ periodically  ⑬ often

19. This  is to this  as this  is to —

20. At a dinner there is always —
    ⑥ soup  ⑦ wine  ⑨ food  ⑩ waiters  ⑬ dishes

21. If 10 boxes full of apples weigh 400 pounds, and each box when empty weighs 4 pounds, how many pounds do all the apples weigh?
    ② 40  ② 360  ② 396  ② 400  ② 404

(Go right on to the next page.)
22. If a boy can run at the rate of 5 feet in ¼ of a second, how many feet can he run in 10 seconds?

23. A thermometer is related to temperature as a speedometer is to —

24. "State of changing place" is a good definition for —

25. If the first two statements following are true, the third is (?)

26. If the words below were arranged to make a good sentence, with what letter would the second word of the sentence begin?

27. Sunlight is to darkness as (?) is to stillness.

28. A grandmother is always (?) than her granddaughter.

29. Such things as looks, dress, likes, and dislikes indicate one’s —

30. A tree always has —

31. In general it is safest to judge a man’s character by his —

32. Which of these words is related to many as exceptional to ordinary?

33. This is to this as this is to —

34. What is related to a cube in the same way that a circle is related to a square?

35. Which one of these pairs of words is most unlike the other three?

36. The opposite of awkward is —

37. The two words superfluous and requisite mean —

38. Of the five words below, four are alike in a certain way. Which one is not like these four?

39. The idea that the earth is flat is —

40. The opposite of loyal is —

41. The moon is related to the earth as the earth is to —

42. The opposite of sorrow is —

43. If the first two statements are true, the third is (?)

44. If 2 ½ yards of cloth cost 30 cents, what will 10 yards cost?

45. Congest means to bring together, condole means to grieve together. Therefore con means —
46. The law of gravitation is —
   (a) obsolete (b) absolute (c) approximate (d) conditional (e) constitutional

47. Oil is to toil as (?) is to hate.
   (a) love (b) work (c) boil (d) ate (e) hat.

48. If 4 1/2 yards of cloth cost 90 cents, what will 3 1/2 yards cost?
   (a) $3.15 (b) 86 1/2¢ (c) 70¢ (d) 89¢ (e) 35¢

49. Which number in this series appears a second time nearest the beginning?
   6 4 5 3 7 8 0 9 5 9 8 8 6 5 4 7 3 0 8 9 1
   (a) 9 (b) 0 (c) 8 (d) 6 (e) 5.

50. This is to this as this is to —

51. If the first two statements following are true, the third is (?)?
   Some of our citizens are Methodists.
   Some of our citizens are doctors.
   Some of our citizens are Methodist doctors.
   (a) true (b) false (c) not certain

52. Which one of the five words below is most unlike the other four?
   (a) fast (b) agile (c) run (d) quick (e) speedy.

53. One who says things he knows to be wrong is said to be —
   (a) careless (b) misled (c) concealed (d) untruthful (e) prejudiced

54. If the words below were arranged to make the best sentence, with what letter would the last word of the sentence end?
   sincerity traits courtesy character of desirable and are
   (a) r (b) y (c) s (d) e (e) d.

55. If a strip of cloth 36 inches long will shrink to 33 inches when washed, how many inches long will a 48-inch strip be after shrinking?
   (a) 47 (b) 44 (c) 45 (d) 46 (e) 45 1/2

56. Which of these expressions is most unlike the other three?
   (a) draw pictures (b) clean house (c) come home (d) work problems

57. If the following words were seen on a wall by looking at a mirror on the opposite wall, which word would appear exactly the same as if seen directly?
   (a) MEET (b) Rotor (c) MAMA (d) DEED (e) TOOT

58. Find the two letters in the word ACTOR which have just as many letters between them in the word as in the alphabet. Which one of these two letters comes first in the alphabet?
   (a) A (b) C (c) T (d) O (e) R.

59. A surface is related to a line as a line is to a —
   (a) solid (b) plane (c) curve (d) point (e) string.

60. One number is wrong in the following series.
   1 2 4 7 11 16 23
   What should that number be?
   (a) 3 (b) 6 (c) 10 (d) 16 (e) 22.

61. This is to this as this is to —

62. How many of the following words can be made from the letters in the word STRANGLE, using any letter any number of times?
   greatest, tangle, garage, stresses, related, grease, nearest, reeling
   (a) 7 (b) 6 (c) 3 (d) 4 (e) 5.

63. Which of the following is a trait of character?
   (a) reputation (b) wealth (c) influence (d) fickleness (e) strength

(Go right on to the next page.)
64. A statement the meaning of which is not definite is said to be —
   ☐ erroneous  ☐ doubtful  ☐ ambiguous  ☐ distorted  ☐ hypothetical

65. Evolution is to revolution as crawl is to —
   ☐ baby  ☐ floor  ☐ stand  ☐ run  ☐ hands and knees

66. Coming is to came as now is to —
   ☐ today  ☐ some time  ☐ tomorrow  ☐ before now  ☐ hereafter

67. One number is wrong in the following series.
   1 2 4 8 16 32 64
   What should that number be?
   1 3 6 12 48 128

68. If George can ride a bicycle 60 feet while Frank runs 40 feet, how many feet can
   George ride while Frank runs 30 feet?
   ☐ 50  ☐ 10  ☐ 45  ☐ 20  ☐ 70

69. What letter is the fourth letter to the left of the letter which is midway
   between D and I in the word REPRODUCTION?
   ☐ C  ☐ R  ☐ O  ☐ N  ☐ D

70. Which of the five things following is most like these three: ivory, snow, and milk?
   ☐ butter  ☐ rain  ☐ cold  ☐ cotton  ☐ water

71. A hotel serves a mixture of 2 parts cream and 3 parts milk.
   How many pints of milk will it take to make 25 pints of the mixture?
   ☐ 25  ☐ 16  ☐ 15  ☐ 12  ☐ 10

72. A man who spends his money lavishly for non-essentials is considered to be —
   ☐ fortunate  ☐ thrifty  ☐ extravagant  ☐ generous  ☐ economical

73. This ☐ is to this ☐ as this ☐ is to —

74. If the first two statements following are true, the third is (?).
   One cannot become a good violinist without much practice.
   Charles practices much on the violin. Charles will become a good violinist.
   ☐ true  ☐ false  ☐ not certain

75. Which of these expressions is most unlike the other three?
   ☐ small to tiny  ☐ pretty to beautiful  ☐ warm to hot  ☐ excellent to good

76. If the words below were rearranged to make a good sentence, the fifth word in the sentence would begin with what letter?
   life friends valuable to The make asset in a is ability
   ☐ l  ☐ f  ☐ v  ☐ t  ☐ a

77. What number is in the space that is in the rectangle and in the triangle
   but not in the circle?
   ☐ 1  ☐ 2  ☐ 3  ☐ 4  ☐ 5

78. What number is in the same geometrical figure or figures (and no others)
   as the number 6?
   ☐ 1  ☐ 2  ☐ 3  ☐ 4  ☐ 5

79. How many numbers are there each of which is in two geometrical figures
   but only two?
   ☐ 1  ☐ 2  ☐ 3  ☐ 4  ☐ 5

80. If a wire 40 inches long is to be cut so that one piece is \( \frac{2}{3} \) as long as the other piece,
   how long must the shorter piece be?
   ☐ 26\( \frac{1}{2} \) in.  ☐ 39\( \frac{1}{2} \) in.  ☐ 18 in.  ☐ 24 in.  ☐ 16 in.
Sequential Tests of Educational Progress

Mathematics
General Directions

This is a test of some of the understandings, skills, and abilities you have been developing ever since you first entered school. You should take the test in the same way that you would work on any new and interesting assignment. Here are a few suggestions which will help you to earn your best score:

1. Make sure you understand the test directions before you begin working. You may ask questions about any part of the directions you do not understand.

2. You will make your best score by answering every question because your score is the number of correct answers you mark. Therefore, you should work carefully but not spend too much time on any one question. If a question seems to be too difficult, make the most careful guess you can, rather than waste time puzzling over it.

3. If you finish before time is called, go back and spend more time on those questions about which you were most doubtful.
DIRECTIONS FOR PART ONE

Each of the questions or incomplete statements in this test is followed by four suggested answers. You are to decide which one of these answers you should choose.

You must mark all of your answers on the separate answer sheet you have been given; this test booklet should not be marked in any way. You must mark your answer sheet by blackening the space having the same letter as the answer you have chosen. For example:

0 Which one of the following is an animal?
   A Bed
   B Dog
   C Chair
   D Box

Since a dog is an animal, you should choose the answer lettered B. On your answer sheet, you would first find the row of spaces numbered the same as the question—in the example above, it is 0. Then you would blacken the space in this row which has the same letter as the answer you have chosen. See how the example has been marked on your answer sheet.

Make your answer marks heavy and black. Mark only one answer for each question. If you change your mind about an answer, be sure to erase the first mark completely.

Do not turn this page until you are told to do so.
A new drive-in theater has been built just outside of town. The manager is interested in gathering information about his new theater.

1. To get some idea of the average number of passengers per car, the theater manager made the following tabulation of the number of passengers in every other car on opening night.

<table>
<thead>
<tr>
<th>No. of Passengers Per Car</th>
<th>No. of Cars</th>
</tr>
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<tr>
<td>1</td>
<td>100</td>
</tr>
<tr>
<td>2</td>
<td>300</td>
</tr>
<tr>
<td>3</td>
<td>400</td>
</tr>
<tr>
<td>4</td>
<td>200</td>
</tr>
</tbody>
</table>

For these 1000 cars, what was the average number of persons per car?

A 2.0  B 2.5  C 2.7  D 3.0

2. On opening night, a total of 2000 cars entered the theater, but the manager kept track of only 1000, as given in the table above. The manager wants to estimate the average number of passengers per car for the entire 2000 cars. Which of the following statements about such an estimate is correct?

E The correct answer to the preceding question is the best estimate.
F The average is twice the correct answer to the preceding question.
G The average is half the correct answer to the preceding question.
H No estimate is reasonable.

3. Tickets, which are numbered consecutively, are distributed to each car as it is driven into the theater. The table below shows the number of the next ticket ready for sale at the beginning and at the end of each evening. How many cars were at the theater during this week?

<table>
<thead>
<tr>
<th>TICKET NUMBERS</th>
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<tr>
<td>M 18362—19941</td>
</tr>
<tr>
<td>T 19941—20946</td>
</tr>
<tr>
<td>W 20946—21642</td>
</tr>
<tr>
<td>Th. 21642—22505</td>
</tr>
<tr>
<td>F 22505—24031</td>
</tr>
<tr>
<td>Sat. 24031—26132</td>
</tr>
<tr>
<td>Sun. 26132—27525</td>
</tr>
</tbody>
</table>

A 1393  B 9162  C 9163  D 9164

4. The ratio of width to height of the rectangular screen used in this theater is 2.5 to 1. How many square feet are contained in the screen if height of the screen is 24 feet?

E 9.6  F 60.0  G 230  H 1440

5. Four of the cars are parked at locations R, S, T, and U as shown in the figure below.

In which car would a person have to turn his head through the greatest angle in order to look from the left-hand edge of the screen to the right-hand edge of the screen?

A R  B S  C T  D U

6. Another large drive-in theater has 22 rows of cars. If 30 cars could be parked in the first row and if each of the following rows had 6 more spaces than the preceding row, how many does this drive-in hold?

E 786  F 792  G 2046  H 2112
A town hall is being constructed in Mansfield. Aard has collected information about the new wing and is making a model of the first floor. Below is a sketch of the floor plan for his model.

The mayor’s office suite is in the northeast wing of the first floor as shown in the drawing. His receptionist is separated from the rest of the floor by a low railing extending from P to L. Which of the following words is a name for the geometric figure PLMNO?

A. Trapezoid  
B. Triangle  
C. Square  
D. Pentagon

What is the number of square inches in the first-floor area of the model?

E. 72  
F. 236  
G. 258  
H. 300

Howard wants to carve a model of the railing which extends from P to L separating the mayor’s office from the rest of the main floor. About how many inches long should his model railing be?

A. 5.0  
B. 7.1  
C. 8.7  
D. 10.0

A statue will be placed on the first floor at some point that is equally distant from the northwest corner and the southwest corner. On his model, Howard should locate the corresponding miniature statue at which of the following positions?

1. Any point 5 inches from J  
2. 2 inches from J and Q  
3. Any point 5 inches from R  
4. Somewhere on line RL

Go on to the next page.
Mr. Smith has been considering several improvements for his home.

16 He investigated the cost of a refrigerated air-conditioning unit and found that 1 ton of refrigeration for every 400 square feet of floor space would cost $500. For each 1000 square feet the cost would be
   E $200    F $1250    G $2000    H $2500

17 A salesman recommended to Mr. Smith a blower unit that would change the air in the room 10 times per hour. If the unit runs continuously, how many minutes does it take to make one change?
   A $\frac{1}{6}$    B 5    C 6    D Cannot be determined unless the dimensions of the room are known

18 Mr. Smith wants to paint the walls and ceiling of a room. He estimates that there are 950 square feet in the total area to be painted. If 1 gallon of paint covers 350 square feet, how much, to the nearest quart, should he purchase?
   (4 quarts = 1 gallon.)
   E 2 gallons    F 2 gallons 1 quart
   G 3 gallons    H 2 gallons 3 quarts

19 Mr. Smith wants to make a bracket to hold tools by drilling 8 holes, equally spaced between centers, in a block of wood 4 feet in length. If the center of each end hole is 3 inches from the end, which computation should be used to determine the distance \( w \) between the centers of the holes?

\[
A \quad w = \frac{(4 \times 12) - (2 \times 3)}{8} \\
B \quad w = \frac{(4 \times 12) - (2 \times 3)}{8 + 1} \\
C \quad w = \frac{(4 \times 12) - (2 \times 3)}{8 - 1} \\
D \quad w = \frac{4 \times 12}{8 - 1} - (2 \times 3)
\]

20 In preparing to make a new concrete driveway, Mr. Smith found that he should mix cement, sand, and gravel in the ratio 1 : 2 : 3, by volume. Which of the following statements about the mixture is true?
   E One-third of the mixture is sand.
   F There is \( \frac{3}{5} \) as much gravel as sand.
   G There is \( \frac{2}{5} \) as much sand as gravel.
   H Two-fifths of the mixture is sand.

21 Mr. Smith wanted to reduce the area of the driveway without changing its 20-foot width or semicircular shape.

He could do this by
   A reducing only the outer radius \( R \)
   B increasing only the inner radius \( r \)
   C reducing the outer radius \( R \) and increasing inner radius \( r \) by the same amount
   D reducing both radii by the same amount

Mrs. Fox went to the power and light company to check on her electricity bills and to obtain information about electrical equipment.

22 In discussing Mrs. Fox's electricity bills, the company representative pointed out that the cost of operating a lamp is directly proportional to the amount of time it is in use and the rate at which it consumes energy. The watt is a unit for measuring the rate at which electrical energy is used. As an example, he showed her the chart below, giving the number of hours that each of the lamps was used during one week:

- 40-watt lamp 30 hours
- 60-watt lamp 20 hours
- 150-watt lamp 8 hours

Which lamp would have cost most to operate during that week?
   E 40-watt lamp
   F 60-watt lamp
   G 150-watt lamp
   H The cost is the same for each lamp.

Go on to the next page
The company's monthly rates for the consumption of kilowatt-hours of electricity are:

<table>
<thead>
<tr>
<th>Kilowatt-hours Used</th>
<th>Cents per Kilowatt-hour</th>
</tr>
</thead>
<tbody>
<tr>
<td>For the first 30</td>
<td>4</td>
</tr>
<tr>
<td>For the next 40</td>
<td>3</td>
</tr>
<tr>
<td>For the next 130</td>
<td>2</td>
</tr>
</tbody>
</table>

The shape of the graph comparing the amount of a customer's bill with the number of kilowatt-hours used would look like which of the following?

- \( X = \text{Kilowatt-hours} \)
- \( Y = \text{Amount} \)

24 Part of her bill resulted from the use of electrical motors in her home. Some of the motors she had were those on a washing machine (~\( \frac{1}{3} \) hp.), a vacuum cleaner (~\( \frac{2}{3} \) hp.), and a shop lathe (~\( \frac{1}{4} \) hp.). What would be the arrangement of these horsepower ratings in order of increasing size?

- E \( \frac{1}{3}, \frac{2}{3}, \frac{1}{4} \)
- F \( \frac{1}{3}, \frac{1}{2}, \frac{1}{4} \)
- G \( \frac{1}{3}, \frac{1}{4}, \frac{2}{3} \)
- H \( \frac{1}{4}, \frac{1}{3}, \frac{2}{3} \)

25 In one year the total consumption of electricity in the United States was approximately 400,000,000,000 kilowatt-hours. At the rate of 2 cents per kilowatt-hour, what is the cost, in dollars, of this much electricity?

- A \( 8 \times 10^7 \)
- B \( 8 \times 10^9 \)
- C \( 8 \times 10^{11} \)
- D \( 8 \times 10^{12} \)

**Stop. If you finish before time is called, check your work on this part. Do not go on to Part Two until you are told to do so.**

**DIRECTIONS FOR PART TWO**

Part Two contains the same kind of material as Part One. Mark your answers in the same way.
PART TWO

A well-known astronomer has described some of the problems of traveling to Mars and living on it.

1. In order to guide a space ship to meet the planet Mars as it travels around the sun, it is necessary to know that the path of Mars is elliptical. Which of these is most like an ellipse?

   A
   B
   C
   D

2. The astronomer illustrated the perpetual drought that prevails on Mars in a striking way when he remarked that all the water on the planet would hardly fill Lake Huron. Lake Huron is 206 miles long and 183 miles in breadth. Its water surface area is 23,010 square miles. If the astronomer’s estimate is correct, what is the approximate volume of water on Mars?

   E 37,700 cubic miles
   F 3,810,000 cubic miles
   G 867,430,000 cubic miles
   H Cannot be determined with only the above information

3. According to one plan for traveling to Mars, the round trip would take nearly three earth years, including a stay on Mars of 449 earth days. If 34,000,000 miles is taken as the distance between Mars and earth, which of the following can be used to determine the average speed of travel in miles per hour?

   A \( \frac{3 \times 365 - 449}{12} \times \frac{34,000,000}{34,000,000} \)
   B \( \frac{3 \times 365 - 449}{24} \times \frac{34,000,000}{34,000,000} \)
   C \( \frac{3 \times 365 - 449}{24} \times \frac{34,000,000}{2 \times (3 \times 365 - 449)} \)
   D \( \frac{34,000,000}{2 \times (3 \times 365 - 449)} \)

4. The mean distance of Mars from the sun is 1.41 \( \times 10^8 \) miles. The mean distance from earth to the sun is 9.3 \( \times 10^7 \) miles. How many miles closer to the sun is the earth than Mars?

   E 4.8 \( \times 10^7 \)
   F 4.8 \( \times 10^8 \)
   G 7.89 \( \times 10^7 \)
   H 7.89 \( \times 10^8 \)

5. Mars is often referred to as a small planet because its diameter is only about one-half that of the earth. The surface area of Mars is about what percent of the surface area of the earth?

   A 25%
   B 50%
   C 75%
   D It cannot be determined.

The town of Westfield, Kansas, recently dedicated a new Memorial Library.

6. The $160,000 needed for the library was done by 80% of the 20,000 families living in Westfield. What was the average contribution per contributing family?

   E $6.40
   F $10.00
   G $12.80
   H $16.

7. The librarian calculated that if each of the initial card holders took out 6 books from the old building and returned them at the new building, the library staff would not have to move any books at all. If \( \frac{3}{4} \) of the card holders did so, how many volumes had to be moved by the staff?

   A 2,800
   B 8,400
   C 16,800
   D 67,200

8. The ratio of books classified for children to those classified for adults is 3 to 7. If this ratio is maintained, how many of the next 2,100 books ordered should be children’s books?

   E 210
   F 300
   G 630
   H 900

9. How many volumes of a set of encyclopedias can be placed on a shelf 3 feet long in the new library if each volume is 1.5 inches thick?

   A 20
   B 24
   C 45
   D 54

Bob read an article about fireplaces. He decided to find out if the one in his home met the specifications given in the article.

10. The article stated that the fireplace opening should be from 2 feet 6 inches to 5 feet in width (W) and from 2 feet 6 inches to 4 feet in height (H). The measurements of Bob’s fireplace were W = 36 inches and H = 30 inches. Bob’s fireplace met the book’s specifications for

   E both height and width
   F neither height nor width
   G height only
   H width only

11. According to the article, the deeper the fireplace, the less the amount of heat reflected into the room. In the following formulas D represents depth, T the heat, and k and n are positive constants. Which of these formulas might express the relationship between depth and heat?

   A \( D = k T^n \)
   B \( D = (T^n - k)^n \)
   C \( D = k + T^n \)
   D \( D = \frac{k}{T^n} \)
The diagram below (an isosceles trapezoid), giving the dimensions of a shallow fireplace, was included in the article.

What is the length of PR in inches?

- To avoid downdrafts, the top of a chimney should be 2 feet above the highest point of the roof. A side view of Bob's house, with dimensions, is shown in the figure below.

- Stephen is studying recommended practices in lawn and garden care in order to apply them to the grounds of his new home.

14 A garden book stated that a new lawn requires twice as much seed as is required for renovating an old lawn of the same area. If seed is used at a rate of 1 pound per 400 square feet for an old lawn, what rate should be used for a new lawn?

- To the nearest pound, how many pounds of limestone should be added to a 200-pound compost pile? (1 ton = 2000 pounds.)

16 The variety of corn seed Stephen planted was tested for its plant yield with the following results for three lots of fifty seeds each:

Under the same conditions, what average number of plants per lot may Stephen expect from planting three lots of 100 seeds each?

17 Stephen has 2 cylindrical cans for mixing insect spray. The larger can is 1 1/2 times as tall and has a circular base whose area is four times that of the smaller can. The volume of the larger can is how many times as large as that of the smaller can?

- How many feet above ground level should the top of the chimney be, if the sloping roof rises 1 foot for every 4 horizontal feet?
New roads, highway safety, and map reading are very important to the modern motorist.

18 A driver's manual contains the following statement: "More fatal accidents occur on highways after dark than during daylight, even though the volume of traffic is lighter." Which one of the following conclusions could be inferred directly from this statement?

- E Increased volume of traffic tends to increase fatal accidents.
- F Decreased volume of traffic tends to increase fatal accidents.
- G Decreased volume of traffic for the same number of fatal accidents tends to decrease the percent of drivers having fatal accidents.
- H Fatal accidents increase with increased darkness.

19 A new, straight turnpike climbs with a continuous grade of 150 feet for every 5 miles. How many feet would the turnpike climb in the distance represented by 1 1/2 inches on a map with a scale of 1 inch for 50 miles?

- A 45
- B 1500
- C 2250
- D 7500

20 Five highways radiate from an intersection with equal angles between them. What is the size of each of these angles?

- E 36°
- F 45°
- G 60°
- H 72°

21 To drive from Circleville to Dunton, one now has to go due west from Circleville to Route 1 and then due south 21 miles on Route 1 to Dunton. If Circleville is 41° east of north of Dunton, how many miles apart will the towns be on a new road which is being constructed on a straight line between the towns?

\[
\begin{align*}
\sin 41° &= .66 \\
\cos 41° &= .75 \\
\tan 41° &= .87 \\
\end{align*}
\]

- A 15.8
- B 24.1
- C 28.0
- D 31.8

22 One river had risen until it was 20 feet deep 8 feet above normal. What is the normal depth of the river?

- E 4
- F 10
- G 12
- H 28

23 If it were raining at the rate of 0.2 cubic foot per second per acre and if 50 percent of the rain fell on 10,000 acres ran off into the river, how many cubic feet of water would pour into the river every 10 seconds?

- A 1,000
- B 10,000
- C 25,000
- D 40,000

24 One of the serious effects of the flood was the erosion of the riverbank. For certain soils, erosion comes noticeable when the velocity of the water reaches 5 feet per second. How many miles per hour is this? (5280 feet = 1 mile.)

- E 0.7
- F 3.4
- G 7.0
- H 14.0

25 One town was badly damaged when the water broke through a hole in its dike. Water breaks through a hole in the side of a dam at a velocity in feet per second through the hole given by the formula \( v = 8.5 \sqrt{h} \), where \( h \) is the height in feet of water above the hole. The water is now 2 feet above the hole. How many feet above the hole must the water be in order for velocity to be 4 times as great as its present velocity?

- A 8
- B 32
- C 34
- D 64

A recent newspaper article discussed the devastating effects of the local rainstorms and floods.
General Directions

This is a test of some of the understandings, skills, and abilities you have been developing ever since you first entered school. You should take the test in the same way that you would work on any new and interesting assignment. Here are a few suggestions which will help you to earn your best score:

1. Make sure you understand the test directions before you begin working. You may ask questions about any part of the directions you do not understand.

2. You will make your best score by answering every question because your score is the number of correct answers you mark. Therefore, you should work carefully but not spend too much time on any one question. If a question seems to be too difficult, make the most careful guess you can, rather than waste time puzzling over it.

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DIRECTIONS FOR PART ONE

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You must mark all of your answers on the separate answer sheet you have been given; this test booklet should not be marked in any way. You must mark your answer sheet by blackening the space having the same letter as the answer you have chosen. For example:

Which one of the following is an animal?
A Bed
B Dog
C Chair
D Box

Since a dog is an animal, you should choose the answer lettered B. On your answer sheet, you would first find the row of spaces numbered the same as the question—in the example above, it is 0. Then you would blacken the space in this row which has the same letter as the answer you have chosen. See how the example has been marked on your answer sheet.

Make your answer marks heavy and black. Mark only one answer for each question. If you change your mind about an answer, be sure to erase the first mark completely.

Do not turn this page until you are told to do so.
PART ONE

1 Which of the following is the main idea of this cartoon?
   A The power of the vote is neglected by many eligible voters even while it is denied to young people.
   B Voting should be compulsory for every citizen who is old enough to vote.
   C The power of the vote is the most important right which any citizen possesses.
   D If eighteen-year-olds are old enough to fight, they are old enough to vote.

2 The cartoonist seems to think eighteen-year-olds are
   E worthy of more consideration as active citizens
   F in need of firm guidance
   G thoughtless but well-intentioned
   H no better than their parents

3 Of which party is the cartoonist most likely a member?
   A Republican    B Democratic
   C Socialist      D The cartoon does not indicate.

4 Which of the following would probably find the publication of such a cartoon most welcome?
   E A board of elections in a party primary
   F A reform candidate challenging the party machine in a primary election
   G A majority-party candidate in a one-party state
   H A party-machine candidate in a party primary

5 An important idea which the cartoonist wishes present is that
   A the power of the state is more important than the welfare of individuals
   B government should be run by those at the top since ordinary people are neither able nor interested in public affairs
   C an informed and vigilant public is necessary to achieve good government
   D the more responsibility the government takes for the people's welfare, the better their welfare will be cared for

The following are selected articles from the French Declaration of the Rights of Man and the Citizen.

1. Men are born and remain free and equal in rights. Social distinctions may be based only upon general usefulness.

6. Law is the expression of the general will; all citizens have the right to concur personally, or through their representatives, in its formation; it must be the same for all, whether it protects or punishes. All citizens, being equal before it, are equally admissible to all public offices, positions, and employments, according to their capacity, and without other distinction than that of virtues and talents.

9. Since every man is presumed innocent until declared guilty, if arrest be deemed indispensable, unnecessary severity for securing the person of the accused must be severely repressed by law.

10. No one is to be disquieted because of his opinions, even religious, provided their manifestation does not disturb the public order established by law.

11. Free communication of ideas and opinions is one of the most precious of the rights of man. Consequently, every citizen may speak, write, and print, freely, subject to responsibility for the abuse of such liberty in the cases determined by law.

13. A common tax is indispensable; it must be assessed equally on all citizens in proportion to their means.

14. Citizens have the right to ascertain, by themselves or through their representatives, the necessity of the public tax, to consent to it freely, to supervise its use, and to determine its quota, assessment, payment, and duration.

17. Since property is a sacred and inviolable right, one may be deprived thereof unless a legally established public necessity obviously requires it, a upon condition of a just and previous indemnity.
Which of the articles of the declaration is concerned with a right which was a major issue between the American colonists and Great Britain prior to the American Revolution?

E 9  F 10  G 13  H 14

In view of conditions in France in the century before the declaration was written, these ideas can best be described as

A reactionary  B conservative  C radical  D liberal

The fundamental principle underlying the formation of the Congress of the United States is best expressed in which article of the declaration?

E 1  F 6  G 13  H 17

Which of the following conditions is most necessary to ensure rights such as those described in the declaration?

A There must be a cabinet system.
B There must be a popularly elected two-house legislature.
C There must be support of these rights by courts of law.
D There must be a federal system of government.

are four statements reflecting ideas current in different periods of American history.

rs is a people whose love of liberty has won it and whose genius for self-government has preserved it. Is there room for reasonable doubt that this nation is destined to help civilize mankind? We cannot retreat from any soil where Providence has unfurled its flag; it is ours to save that soil for liberty and civilization.

The right to enjoy liberty is inalienable. According to Scripture man cannot hold property in man. View of the religious and civil privileges of thision, the guilt of its oppression is unequaled by that of any other on the face of this earth; and, therefore, is bound to repent instantly and to let the oppressed go free.

ur most cherished dream is liberty. The smaller society from the Piedmont and the Tidewater planter united in this cause. We have, in truth, governed ourselves for more than a century, and no enemy army can deny us our natural rights.

IV: The main threat to liberty and the Republic is the money question. If protection has enslaved its thousands, the gold standard has enslaved its tens of thousands. What if the great cities are in favor of the gold standard? The cities depend upon these broad prairies. Destroy the farms and grass will grow in the streets of every city.

10 Which statement was made by an abolitionist?

E I  F II  G III  H IV

11 Which statement was made during the American Revolution?

A I  B II  C III  D IV

12 Which statement is an expression of the ideas of late nineteenth century American imperialism?

E I  F II  G III  H IV

13 The author of which statement would probably favor government regulation of railroads and monopolies?

A I  B II  C III  D IV

14 The second sentence in Statement III makes reference to the people of

E New York  F Pennsylvania  G Virginia  H Massachusetts

15 All of the following can be directly associated with Statement II EXCEPT the

A Dred Scott decision  B Missouri Compromise  C Emancipation Proclamation  D Homestead Act

16 When the author of Statement I wrote that “We cannot retreat from any soil . . . ,” he probably had in mind

E Alaska  F Korea  G the Philippines  H Canada

Go on to the next page.
Below are statements made in a discussion among five students on the topic: “What I Desire Most after Graduation from School.”

I: It is most important that a person find a good job so that he can enjoy the comforts of life.

II: Enjoying life is not a matter of jobs; it’s a feeling that you belong. In our society, that is a problem for someone like me.

III: Belonging means conforming. If I’m rich and powerful, I’ll be able to do what I want.

IV: Settling down in a place where one can know one’s neighbors and say hello to everyone when one goes shopping in town—that’s most important.

V: Most of all, I wish to follow in the footsteps of my father and my father’s father. All my relatives will approve of this.

20 A point of view often described as “rugged individualism” is reflected in the statement of Student

E I F II G III H IV

21 Which of the following students indicates clearly that he would prefer NOT to live in a large urban community?

A I B II C III D IV

22 Which of the following students is most probably a member of a minority group?

E I F II G III H V

23 Which of these students expresses a point of view LEAST typical of contemporary America?

A II B III C IV D V

24 The goals which all of the students have in common are

E Wealth and position
F Power and influence
G Popularity and prestige
H Security and status

17 In which hemisphere is Island Y located?
A Western  B Southern  C Northern
D It cannot be determined.

18 Which city probably has the coolest climate?
E 1 F 2 G 3 H 4

19 Which of the following is probably NOT an important crop of this island?
A Sweet potatoes  B Wheat
C Rice  D Coffee
Which of the following is the best title for this graph?

A. Wages and Prices
B. Earnings of Workers and Consumers
C. The Cost of Living
D. Changes in Income

In comparison with workers in 1954, it is likely that workers in 1915 spent a larger part of their earnings on:

1. recreation and education
2. food and shelter
3. transportation and clothing
4. medical and dental care

27 Which of the following does the graph indicate about the comparative position of industrial workers and farmers in time of war?

A. Industrial workers were better off than farmers.
B. Industrial workers were worse off than farmers.
C. The two groups were in about the same position.
D. The comparative position of the two groups cannot be determined from the information given.

28 Considering the period from 1900–1910 as shown on the graph, which of the following conclusions can be drawn?

E. The real income of weekly wage earners remained about the same during this period.
F. Consumer prices were too low to meet the needs of the average weekly wage earner.
G. The real income of weekly wage earners rose during this period.
H. The increase in the cost of living during this period caused a rise in the level of living.
Below are descriptions of the work of four men.

**Man I** is one of a group of experts who are trained in the trade of boat construction from childhood. Different parts require different experts who know what to do and what not to do. Special tools belong to each of these. All the parts of the boat are separately done as perfectly as possible. Then the whole is put together. Cinders are used to mark the spots where the connections are going to be.

**Man II** tends a machine in which thread is formed on screws by the action of hardened metal dies that reciprocate, rolling the screw shank between their surfaces and pressing the metal of the screw shank into thread form.

**Man III** performs general carpentry work involved in erecting wooden building frames, laying floors, building forms for concrete and wooden scaffolds, and similar work entailing the cutting, shaping, and fastening together of wood.

**Man IV**, having found a waterworn stone suitable to his purpose, chips or pounds the part intended for the cutting edge with a hard rounded pebble until he has brought it somewhat into shape. Then he rolls it down on a suitable rock in the bed of a stream until he has produced a good edge.

---

**29** The work of which man can best be categorized as "neolithic"?
- A I
- B II
- C III
- D IV

**30** The work of which men reflects a society in which there is division of labor?
- E II and IV only
- F I and III only
- G I, II, and III only
- H I, II, III, and IV

**31** The work of which man is best associated with term "mass production"?
- A I
- B II
- C III
- D IV

**32** Starting with the earliest, which is the correct historical order for the four men described?
- E I, II, IV, III
- F II, I, IV, III
- G IV, I, III, II
- H IV, II, III, I
The conditions shown in Diagram I have been cured in Diagram II by which of the following methods?
1. Good crops and prosperity
2. Improved homesite facilities
3. Terracing and contour plowing
4. Intensive land use

Which of these government agencies would be LEAST likely to be involved in dealing with the problems shown in Diagram I?
1. Department of Commerce
2. Department of the Interior
3. Tennessee Valley Authority
4. Department of Agriculture

35 The first president of the United States to be actively concerned with the problems shown in Diagram I was
A. Ulysses S. Grant
B. Theodore Roosevelt
C. Calvin Coolidge
D. Harry S. Truman

Stop. If you finish before time is called, check your work on this part. Do not go on to Part Two until you are told to do so.

DIRECTIONS FOR PART TWO

Part Two contains the same kind of material as Part One. Mark your answers in the same way.

Do not turn this page until you are told to do so.
PART TWO

1 Which of the following CANNOT be determined from the chart for any year shown?
   A The number of Progressives in the House
   B The number of seats in the House held by Republicans
   C The number of seats in the House held by Democrats
   D The proportion of Democrats to Republicans in the House

2 Control of the House was vested in a political party different from that of the President after which of these elections?
   E 1904
   F 1910
   G 1926
   H 1938

3 Which of the following conclusions concerning the effect of presidential elections on congressional elections is most valid?
   A A victorious presidential candidate helps increase his party's representation in the House
   B The Republicans are more likely to win control of the House in a presidential election year than are the Democrats.
   C The Democrats are more likely to win control of the House in a presidential election year than are the Republicans.
   D A presidential election has little effect on representation in the House.

4 During which of the following years did the floor leaders and the party whips in the House Representatives have to work particularly hard to secure majorities?
   E 1903–1905
   F 1911–1913
   G 1915–1917
   H 1923–1925

Go on to the next page...
There are four statements concerning the origins of American freedom.

1. Of the people who came to America broke away from situations in which they felt that they were imprisoned and denied their rights. They came to a new country where life was hard and dangerous. It they felt that there was freedom; they had opened the bars.

2. In nearly three centuries, Americans were given the geographical protection and opportunity that made freedom almost automatic. Behind them was the Atlantic.

3. Here is much truth in the saying that freedom is the ability to go somewhere else. A powerful guarantee against oppression is the knowledge on all hands that the victim can pull up stakes. During the last period of the open frontier the freedom to move away to the empty country to the west was a dominant feature in the attitude of Americans toward authority.

4. The American people had brought with them the laws and institutions of England. These laws and institutions had been forged in a long struggle between king and the people. They were designed to protect the citizen against the government.

Which statements consider the influence of the natural environment?

A I and II  B II and III  C II and IV  D III and IV

Which statement(s) consider(s) the European heritage as a positive factor in the growth of American freedom?

E II only  F IV only  G I and II only  H I and IV only

Which of the following features of American life mentioned in the statements is LEAST applicable today?

A The immigration of people seeking freedom  B The geographic protection of the Atlantic Ocean  C The opportunity to move somewhere else  D Laws designed to protect the citizen against the government

Which of the following rights or practices in the United States CANNOT be included among those referred to in Statement IV?

1. Trial by jury  2. The right of suffrage  3. The right to a writ of habeas corpus  4. The power of the courts to declare a law unconstitutional

9 In which of the following nations has freedom grown under circumstances most like those described in the above statements?

A India  B Mexico  C Australia  D France

United States Under-Secretary of State Sumner Welles, in a speech given May 30, 1942, declared:

"If this war is in fact a war for the liberation of people, it must assure the sovereign equality of peoples throughout the world, as well as in the world of the Americas. Our victory must bring in its train the liberation of all peoples. Discrimination between peoples because of their race, creed, or color must be abolished.

"The age of imperialism is ended. The right of a people to their freedom must be recognized, as the civilized world long since recognized the right of an individual to his personal freedom."

10 To which of the following countries have the principles stated by Secretary Welles been applied since 1945?

E Iran, Afghanistan, and Iraq  F The Belgian Congo, Saudi Arabia, and Egypt  G South Africa, Japan, and Guatemala  H India, Pakistan, and Indonesia

11 Between 1931 and 1941 a Far Eastern policy opposite to that described by Secretary Welles was followed by

A China  B Japan  C India  D Pakistan

12 Which of the following actions of the United States was based upon principles like those of Secretary Welles?

E "Dollar diplomacy" in Latin America  F The maintenance of extraterritorial rights in China  G The acquisition of the Mexican Cession  H The granting of Philippine independence

Go on to the next page.
Inches of Rainfall

Degrees of Temperature

August

November

CITY I

CITY II

CITY III

CITY IV

Go on to the next page
ons 13–17 are based on the climatic charts for cities, given on the opposite page (page 10).

A climatic chart, the temperature in degrees and rainfall in inches are plotted for each month. As are indicated by letters, and points for consecutive months are joined. For example: In July, the temperature at City I is 77 degrees, and the rainfall is about 1.2 inches.

The annual temperature range is greatest in City

I  ■  ■  ■  ■
II  ■  ■  ■  ■
III  ■  ■  ■  ■
IV  ■  ■  ■  ■

An asthma sufferer looking for a climate with low relative humidity would probably choose to live in City

I  ■  ■  ■  ■
II  ■  ■  ■  ■
III  ■  ■  ■  ■
IV  ■  ■  ■  ■

A traveler would see sheep grazing and irrigated fields in and around which of the following cities?

I  ■  ■  ■  ■
II  ■  ■  ■  ■
III  ■  ■  ■  ■
IV  ■  ■  ■  ■

Key West, Florida
Portland, Maine
Albuquerque, New Mexico
Seattle, Washington

During the course of an inflationary movement, there are many who find it difficult to think that anything is wrong. There is a ready market, everyone is employed, wages are good, production is high, profits are good, and industrial capacity is being expanded.

But what fully justifies every effort to halt such an inflation is the certainty that, if it runs its course unimpeded, it will spread in its wake the disaster of falling markets, unemployment, and business losses.

However, these developments are not inescapable. A well-designed program of measures to combat the inflationary trend will permit us to reach a state of economic stability without an interlude of severe depression.

18 Which of the following might the author include in a “program of measures” referred to in the last sentence?
   - E Curbing installment buying
   - F Lowering taxes
   - G Increasing government spending
   - H Lowering the interest rate on loans

19 Which of the following best states the economic condition discussed by the author?
   - A Supply and demand
   - B The welfare state
   - C The business cycle
   - D Government ownership

20 The situation described by the author in the first paragraph works greatest hardship on the
   - E union worker
   - F white-collar worker
   - G person living on a pension
   - H owner of stocks and bonds
21 Which of the following stocks had the widest range in price during the first seven and one-half months of 1955?

A General Motors common  B General Electric  C Gimbel  D Gillette

22 The man who invests in common stock becomes a

E director of a corporation  F debtor of a corporation  G partial owner of a corporation  H manager of a corporation

23 Mr. Smith owns 10 shares of Gillette stock. Under present conditions he may expect a total yearly dividend of

A $40.00  B $50.00  C $63.00  D $79.00

---

Descriptions of Four Governments

I: The legislature consists of two branches; the members of the first branch are elected by the people, and the members of the second branch sit by virtue of military right. All measures must be passed by branches of the legislature.

II: Each state retains its sovereignty, freedom, and independence, and every power, jurisdiction, and not expressly delegated to the national government is retained by the state government.

III: The national legislature consists of two branches.

The members of the first branch are elected by the people of several states. The members of the second branch are elected by those of the first, of a proper number of persons nominated by the individual legislatures. The national legislature sits in all cases in which the separate states are competent or in which the exercise of its powers would disrupt the harmony of the try.

IV: All legislative powers are vested in a congress which consists of two houses. The first house is composed of members chosen every second year by the people of the several states. The second house is composed of two members from each state, chosen by the legislature thereof. The congress has the power to make laws necessary and proper for carrying out all powers vested in the government.

24 In which government is the principle of the rights most strongly recognized?

E I F II G III H IV

25 The government of the United States before the nation became popularly elected was more

A I  B II  C III  D IV

26 Which governments are federal in form?

E II and III only  F III and IV only  G II, III, and IV only  H I, II, III, and IV

27 Which of the following statements is most truthfully true of the second house in Government IV?

A It is popularly elected.
B It has less power than the first house.
C It sits more frequently than the first house.
D It acts as a brake on the first house.

28 The government of Great Britain in the tenth century was most like Government

E I F II G III H IV

Go on to the next
32 What do pictures like this one tell us about the role of artists in American life?
E Artists sometimes incorporate their attitudes toward the world about them into their paintings.
F Artists do not reflect their own value judgments in their work.
G Artists seldom deal with important problems.
H Artists usually display an unsympathetic attitude toward the "little man."

Following are selected articles from THE CODE OF HAMMURABI.
8. If a man steal an ox, or sheep, or ass, or pig, or boat, from a temple or palace, he shall pay thirty-fold; if it be from a freeman, he shall pay tenfold. If a thief has nothing with which to pay, he shall be put to death.
21. If a man make a breach into a house, one shall kill him in front of the breach, and bury him in it.
22. If a man carry on highway robbery and be captured, he shall be put to death.
25. If a fire break out in a man's house, and anyone who goes to put out the fire shall lift up his eyes towards the owner's property and take any property of the owner of the house, he shall be cast into that same fire.
127. If a man point his finger at a man's wife, but cannot prove his charge, he shall be taken before the judge, and shall be branded on his forehead.
143. If a man's wife be not frugal, if she gad about, is extravagant in the house, belittle her husband, they shall throw that woman into the water.

33 Which article of Hammurabi's code shows the absence of the idea of equality before the law?
A 8   B 25   C 127   D 143

34 As compared with present-day ideas about the treatment of wrongdoers, Hammurabi's code relied more heavily on
E imprisonment   F capital punishment
G fines   H rehabilitation

35 Which of the following articles of Hammurabi's code describes an offense which today would be called slander?
A 21   B 25   C 127   D 143

If you finish before time is called, you may check your work on either Part One or Part Two.
Sequential Tests of Educational Progress

Science
**General Directions**

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O Which one of the following is an animal?
   A Bed
   B Dog
   C Chair
   D Box

Since a dog is an animal, you should choose the answer lettered B. On your answer sheet, you would first find the row of spaces numbered the same as the question—in the example above, it is O. Then you would blacken the space in this row which has the same letter as the answer you have chosen. See how the example has been marked on your answer sheet.

Make your answer marks heavy and black. Mark only one answer for each question. If you change your mind about an answer, be sure to erase the first mark completely.

Do not turn this page until you are told to do so.
**PART ONE**

**Questions 1-8**

You are exploring the desert country of the southwestern United States.

1. In studying the geologic history of the region, you find stratified layers of sand, gravel, and smooth boulders for hundreds of feet below the surface in certain areas. This would suggest that these areas:
   - A had been filled in by intermittent streams
   - B were once the bed of an ancient sea
   - C were filled in by severe wind erosion
   - D had received hardly any rainfall for a long period of time

2. Even though the temperature on the desert may be 110 degrees, you are more comfortable there than you would be in Chicago at a temperature of 90 degrees because in the desert:
   - E there are prevailing winds
   - F the moisture content of the air is low
   - G the barometric pressure is high
   - H the cloud formations move slowly

3. Which of the following best explains the climate found in this desert?
   - A Distance above sea level
   - B Distance north of the equator
   - C Mountain ranges between the desert and the ocean
   - D Distance from the nearest large body of water

4. The simplest and most effective method for cooling the metal canteen of water at your desert camp is to:
   - E put it in a shallow hole
   - F keep it in the tent out of the sun
   - G bury it in the sand
   - H wrap it in a damp cloth

5. You have heard that the kangaroo rat, a desert animal, never drinks water. The reason it can survive without drinking any water is that it:
   - A needs no moisture to keep alive
   - B absorbs water through the skin
   - C uses water formed from the oxidation of food
   - D takes water from the air as it breathes

6. You note that the cactus has a green waxy surface but no leaves, and you wonder how these plants obtain food. Which of the following is correct?
   - E The plants are parasites.
   - F The food comes from other plants that have leaves.
   - G Food is made in the flowers.
   - H Food is manufactured in the green surfaces of the plants.

7. The absence of leaves and the waxy surface of the cactus are important adaptations to life in hot, dry conditions because these features:
   - A protect it from being eaten by animals
   - B help to reduce the loss of water
   - C enable it to store large amounts of water underground roots
   - D enable it to live without water

8. In order to get your jeep up the side of a side canyon you use a winch attached to the front of your jeep and driven by the jeep's engine. First attach the winch as shown in drawing X, but find it works much better with arrangement Y.
   - Y is better than arrangement X because
   - E arrangement Y requires the application of a smaller force
   - F a pulley always makes it easier to lift a load
   - G the jeep will move faster than with arrangement X
   - H the noose around the tree will be less likely to come unfastened from the tree

**Questions 9-14**

Bob lived on a farm. He was studying biology in school and began to notice many applications of biological principles in his father’s everyday activities on the farm.

9. One day Bob helped his father cover the cactus with paper bags in order to bleach it. He realized that this was done to reduce the amount of:
   - A transpiration from the plant
   - B light reaching the plant
   - C carbon dioxide reaching the plant
   - D oxygen leaving the plant

Go on to the next page...
When Bob's father asked him to prepare some flats for growing mushrooms in the basement, Bob knew that he should use soil which
E was rich in organic matter
F was rich in nitrates
G had a high percentage of sand
H had a low moisture-retaining capacity

This year, Bob's father wanted to raise hybrid corn like that which their neighbor had grown successfully last year. To do this, he should ask his neighbor for some seed
A obtained last year from his hybrid corn
B of the same kind he had planted last year
C from the two pure varieties which were crossed to get the hybrid seed
D treated with plant hormones

When apple trees were in bloom on the neighbor's farm, Bob saw that several hives of bees had been put in the orchard in order to
E cross-pollinate the apple blossoms
F obtain a supply of honey
G destroy insect pests harmful to apples
H attract birds beneficial to the orchard

One night while the orchard was still in blossom, the temperature dropped to 25°F. When Bob saw the trees the next morning, most of the blossoms had turned dark brown. From what he knew about the life cycle of trees, Bob was correct in predicting that this year the orchard would produce
A mostly dwarf fruit
B mostly damaged fruit
C fruit much later than usual
D scarcely any fruit

Bob noticed that his father always inoculated soybeans with a certain kind of bacteria before planting them. When he asked his father about this, he learned that these bacteria were intended to help make the soil
E more acid
F more alkaline
G richer in nitrogen
H more resistant to weeds

16 Several of the club members noticed how much cooler it was at the top of the mountain than at the foot. Someone asked, "Since the top of the mountain is nearer the sun, why isn't it hotter on top?" Several explanations were offered. Which one is correct?
E The mean temperature of an area depends only upon its altitude above sea level.
F The more rain that falls, the cooler it gets.
G A blanket of air prevents the escape of heat from valleys and other low-lying regions.
H The distance from the equator is the most important cause of temperature differences.

17 As the group enters the observatory, one of the boys falls on the metal stairway and gashes his leg. Fortunately he did not cut an artery. Losing arterial blood is extremely dangerous because such blood
A is under high pressure returning to the heart
B is carrying oxygen needed by cells of the body
C cannot be made to clot
D is under high pressure coming directly from the heart

18 Before going into the observatory you point out the bright star Sirius to a friend. He mentions that it takes many years for light to reach the earth from even such a near star. This puzzled you until you were reminded that
E light travels slower in space than on earth
F the speed of light although very great is not instantaneous
G light travels more slowly after being reflected
H light travels from different stars at different speeds

19 In order to keep a certain star in the center of the telescope's field of view, a mechanism moves the telescope to keep up with the star's motion across the sky from east to west. This apparent motion of the star is caused by
A the rotation of the earth
B actual movement of the stars in great circles with the North Star as the center
C distant stars following our sun through space
D rotation of our solar system in its galaxy

Go on to the next page.
You hear that the moon moves around the earth once in about every 28 days with the same side always toward the earth.

It follows therefore that the length of a lunar night must be about

E 12 hours long  F 24 hours long
G 2 weeks long  H 1 month long

Questions 21-25

Sarah is taking a course in home economics and finds it helpful in understanding more about cooking at home.

21 When making jelly at home Sarah adds pectin to make the jelly firm. Which of the following is the most likely reason why the pectin does this?
   A Pectin dissolves in fruit juices to form a homogenous true solution.
   B Pectin boiled with the fruit sugars forms an emulsion.
   C Pectin boiled with the fruit sugars forms a colloid.
   D Pectin dissolves in fruit juices to form a heterogeneous suspension.

22 After the jelly had been standing for a few days, Sarah noticed that it was fermenting. She could best prevent further fermentation by
   E adding a pinch of salt to the jelly and resealing
   F adding sugar to the jelly and resealing
   G freezing the jelly
   H boiling the jelly and then resealing

23 Sarah told her father that she had learned that sugar is a mixture of carbon, hydrogen, and oxygen. Her father said that she should not have used the word "mixture" that way because
   A sugar has many of the properties of carbon, hydrogen, and oxygen
   B oxygen, carbon, and hydrogen are present in sugar in fixed proportions by weight
   C the word "mixture" implies a definite composition of materials
   D the word "mixture" is not a scientific term

24 Sarah is preparing a talk for her home economics class on "How The Body Converts Food Into Tissue." In carrying out this assignment, it is most important that she be able to explain meaning of the word
   E assimilation
   F reduction
   G coagulation
   H neutralization

25 In reading for her project, she came across the term "essential amino acids." She asked several of her friends why these were called "essential." Which one of the following answers is correct?
   A They are the amino acids which are used to supply energy.
   B They are the amino acids which the body itself cannot manufacture.
   C They are the amino acids which are basic to hormone production.
   D They are the amino acids which form blood.

Questions 26-30

A superhighway is under construction near your house. While watching the progress of the project, you get an opportunity to talk to the engineer-in-charge.

26 You ask why the highway is "banked" at curves with the outside edge higher than the inside edge. The best answer is that the bank curve
   E causes the center of gravity of vehicles to be lowered
   F is designed to supplement the mechanical advantage of the steering column
   G increases the coefficient of friction between rubber tires and road surface
   H tends to keep the resultant of a vehicle's weight and its centrifugal force perpendicular to the pavement

27 The engineer is considering testing new steel reinforcements for use in the concrete pavement. Of the following, the most important problem would be to
   A get a steel whose coefficient of expansion is close to that of concrete
   B determine the oxidation rate of steel
   C measure the ability of concrete to fuse with steel
   D determine the compression strength of steel

Go on to the next page...
Near one group of workmen you notice a large canvas bag containing drinking water. Someone explained, "The water soaks slowly through the canvas and evaporates, and thus keeps the water in the bag cool." This explanation is a statement of 
E opinion backed by no facts
F unjustifiable opinion backed by some facts
G justifiable opinion backed by some facts
H a scientific fact
Nearby is an old concrete highway that was abandoned years ago. Huge cracks have spread through it and much of it is broken into small pieces of stony material. Which of the following best explains this?
A The material used was not suited to the heavy load it had to carry.
B Earthquakes tend to break up surface materials on the earth.
C Weathering is an important factor in the deterioration of man-made structures.
D The concrete was worn too thin by heavy traffic.

Men are planting grass on the sloping surfaces of the road cuts to prevent erosion. The grass will be helpful for all of the following reasons EXCEPT:
E Grass cushions the falling raindrops.
F The soil clings to the roots of grass.
G Grass slows the flow of surface water.
H The flat grass blades keep the rain from reaching the soil.

Stop. If you finish before time is called, check your work on this part. Do not go on to Part Two until you are told to do so.
PART TWO

Questions 1-5

Your family owns a cattle ranch. One of the wells no longer pumps water, and you go out with the hired man to help him fix it.

1 The electrically driven lift pump was designed to draw water up by “suction.” If you found the pump motor running but no water being drawn up, you might reasonably have suspected any of the following EXCEPT
A a leak in the suction pipe under the pump
B an unusually high barometric pressure
C low water in the well at a level more than 34 feet below the pump
D a broken drive shaft between the motor and the pump

2 To remove the motor for a routine checkup, the hired man unbolts it from its concrete base and wedges a crowbar under the motor. He rests the bar on a log like this:

Assuming that you could either push down or pull up on the free end of the crowbar with equal force, it would be easier to continue raising the motor at point X if you were to
E pull up on the crowbar, because this will shift the pump’s center of gravity
F pull up on the crowbar, because this will give the most leverage
G push down on the crowbar, because the log will act as a fulcrum
H push down on the crowbar, because the weight of the bar will assist you

3 While eating lunch, the hired man tells you that a few years ago he had mated some long-legged with some short-legged cattle and had obtained all long-legged offspring. Now he wanted to cross these offspring with a short-legged stock. What proportion of short-legged offspring should he expect from this kind of cross?
A None short-legged
B All short-legged
C About one-fourth short-legged
D About one-half short-legged

4 A new well has just been dug near the corner of four fields on your ranch as shown in the sketch:

To keep all four barrels full of water for stock grazing in each field, the hired man suggests that the four barrels be connected by siphon pipes like this:

Which one of the following best describes the workability of this idea?
E Only barrel No. 1 would ever contain water
F The water would rise and stay at approximately equal levels in all barrels if enough water was supplied to barrel No. 1.
G Barrel No. 1 would always have the highest water level and barrel No. 4 the lowest.
H It would be unlikely that barrels No. 3 and 4 would ever have any water in them.

5 As you finish your lunch in the field, you see huge thunderheads whose characteristic flat undersides are caused chiefly by
A hot moist air rising rapidly and cooling upon expansion until it reaches the dew point
B the condensation of moisture settling above the clouds
C shifting winds above the clouds
D strong steady winds along the ground

Go on to the next p.
Questions 10-15

Industrial development and a rapidly growing population are creating a water-supply problem in your town. The community secures its water from deep wells.

10 A committee is appointed to solve the problem. In order to meet the demands of the community, which of the following should it do first?

E Locate the source of the underground water supply.
F Determine the location of the nearest artesian water supply.
G Plan an extensive program of drilling new wells.
H Survey the future needs of industry and population growth.

11 The water from the deep wells is clear and contains no harmful bacteria. What would be necessary to make the water safe to drink?

A Treat the water with sodium fluoride.
B Chlorinate the water.
C Aerate the water. D No treatment is needed.

12 You have heard it proposed that plans for a new city water works should include provisions for passing the water through an ion-exchange resin. If this is done, there will probably be

E a decrease in the incidence of communicable diseases in the town
F much less sediment in the water
G a decrease in the amount of soap used per person per year
H far fewer cases of intestinal diseases

13 In the index of your science book, you find the following entries:

Water
bacteriain, 162
conservation of, 127
distilled, 219
erosion of, 130
excretion of, 216
expansion of, 135
experiments with, 325
hardness of, 141
in blood, 218
properties of, 140
purification of, 150
refraction of light by, 300
weight of body due to, 225

To learn more about the treatment of drinking water, you should start by looking on pages

A 141, 150, 162 B 219, 225, 300
C 135, 141, 218 D 130, 150, 162

Go on to the next page.
14 It is expected that when an adequate water supply is available, many of the farmers near your town will install irrigation systems. The most likely reason that the farmers are considering irrigating is that the rainfall in the region was 70.7 inches last year. The region is located far from the ocean, and rainfall comes at widely scattered intervals over the year. Rainfall causes considerable erosion on the farm lands.

15 Some of the local farmers have suggested seeding the clouds with finely divided silver iodide to produce rain. Which of the following is the best reason for NOT doing this?

A Silver iodide is expensive.
B The clouds are too close to the earth and will cause only lightning.
C Seeding of clouds can cause great floods during the growing season.
D In your region, there is always a great deal of fine dust in the air.

Questions 16-21

You are making your first trip by commercial airlines, traveling from New York to San Francisco.

16 As the plane climbs, your neighbor asks why his ears "pop." Which of the following is the best explanation?

E The ears "pop" as air in the middle ear enters the throat to equalize the pressure on both sides of the eardrum.
F The ears "pop" as air pushes in on the eardrum and air enters the middle ear to equalize the pressure.
G Air pushes on the eardrum until the pressure is great enough to let the air through with a "pop."
H Changes in air pressure cause changes in the thickness of the eardrum resulting in the "popping" sensation.

17 The stewardess tells you that the plane must travel farther to get off the ground at Denver than it does at New York. The reason for this is that at Denver, the

A atmospheric pressure is greater
B atmosphere is drier
C air density is less
D temperature is lower

18 You learn that for every 300 feet the plane rises, the temperature outside drops approximately one degree Fahrenheit. Which of the following best explains this temperature drop?

E High altitude currents cool the upper layers.
F Ground heat never reaches high altitudes.
G Air near the ground takes up heat from larger bodies of water.
H As warm air rises it expands and therefore cools.

19 Referring to question 18, at what height, in feet, would you expect the temperature to drop freezing if the ground temperature is 72°F?

A \( \frac{72 \times 300}{32} \)
B \( \frac{72 - 0}{300} \)
C \( (72 - 0) \times 300 \)
D \( (72 - 32) \times 30 \)

20 No smoking is permitted when the plane is for refueling. This precaution is necessary because

E the oxygen in the air forms an explosive mixture with gasoline vapor
F the nitrogen in the air forms an explosive mixture with gasoline vapor
G gasoline vapor alone is highly explosive
H smoke particles may act as a catalyst for gasoline combustion

21 You are flying west and try to imagine how the path of your fall would appear to someone on the ground if you had to bail out. Which of these represents how the path of your fall would appear to someone looking toward the south?

A

B

C

Go on to the next p
and Jim have been rebuilding a car for their use. They are remodeling it so that it will e well and also have style and speed.

The boys are interested in altering their car so that it will be more stable and will not tend to run over easily on curves. To do this, the boys could determine the kind of steering mechanism which is best determine the kind and size of tires to be used find a way to lower the car's center of gravity find a way to streamline the car more effectively

Bill has seen a number of cars with a small metal strap hanging from the frame of the car and touching the ground. Which of the following explanations of these straps is best?

If the car is struck by lightning, the electricity is conducted to the ground
The strap conducts excess electricity from the battery and generator to the ground
The strap serves no mechanical purpose, but makes the car more stylish
The strap grounds static electricity which is generated by the moving car

Bill claims that water is a good liquid to use in a cooling system because, for equal changes in temperature, it can absorb or give off more heat than most other liquids. The reason Jim gave is a justifiable opinion backed by some facts an unjustifiable opinion not backed by facts a scientific conclusion based on adequate evidence false

<table>
<thead>
<tr>
<th>Per Cent of Glycerine Antifreeze by Weight</th>
<th>Freezing Point (°F)</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>+29.1</td>
</tr>
<tr>
<td>20</td>
<td>+28.4</td>
</tr>
<tr>
<td>30</td>
<td>+14.9</td>
</tr>
<tr>
<td>40</td>
<td>+4.3</td>
</tr>
<tr>
<td>50</td>
<td>-9.4</td>
</tr>
<tr>
<td>60</td>
<td>-30.5</td>
</tr>
<tr>
<td>70</td>
<td>-38.0</td>
</tr>
<tr>
<td>80</td>
<td>-5.5</td>
</tr>
<tr>
<td>90</td>
<td>+29.1</td>
</tr>
<tr>
<td>100</td>
<td>+62.6</td>
</tr>
</tbody>
</table>

The lowest temperature ever recorded in the boys' town was 0°F. According to the chart above, it would be impractical to use a percentage of antifreeze higher than

A 30%  B 50%  C 80%  D 100%

If Jim and Bill were going to take a trip to mountainous country where the temperature occasionally drops to -45°F, about what percentage of glycerine antifreeze should they have in the radiator in order to be sure that it would not freeze?

E 40%  F 70%  G 100%

If the temperature drops to -45°F, one would expect the radiator to freeze regardless of the amount of glycerine antifreeze in it.

From this chart alone, which of the following conclusions is most justified?

A Glycerine is completely soluble in water.
B Only about 70 grams of glycerine will dissolve in 100 grams of water.
C No solution of water and glycerine can contain more than 70% by weight of glycerine.
D Glycerine doesn't dissolve in water, but forms an emulsion.
Jim and Bill are concerned about the brakes on their car and wonder what stopping distances are needed at various speeds. The driving instructor at school showed Jim the following chart:

<table>
<thead>
<tr>
<th>Speed (mi/hr)</th>
<th>Reaction distance (ft/sec)</th>
<th>Braking distance (ft)</th>
</tr>
</thead>
<tbody>
<tr>
<td>20</td>
<td>22 ft. 18 ft.</td>
<td>29.3</td>
</tr>
<tr>
<td>30</td>
<td>33 ft. 44 ft.</td>
<td>44</td>
</tr>
<tr>
<td>40</td>
<td>44 ft. 84 ft.</td>
<td>58.7</td>
</tr>
<tr>
<td>50</td>
<td>55 ft. 135 ft.</td>
<td>73.3</td>
</tr>
<tr>
<td>60</td>
<td>66 ft. 197 ft.</td>
<td>88</td>
</tr>
</tbody>
</table>

Key:
- Reaction distance: distance traveled between seeing danger and applying brakes.
- Braking distance: distance car with four-wheel brakes needs in which to stop.

From this chart alone, which of the following conclusions is most justified?

E For the speeds given, the greater the speed, the greater the reaction distance.
F The higher one's speed, the longer it takes for the average driver to react.
G The braking distance is always greater than the distance traveled in reacting to the danger signal.
H As one doubles the speed, the total distance necessary for stopping becomes twice as great.

From the chart Jim could correctly conclude that the reaction time of the average driver.
A less than one second
B one second
C a little more than one second
D much more than one second

If a person starts to cross a street in front of a car which is 100 feet away and approaching speed of about 40 miles an hour, the car probably
E hit the person and stop on contact
F stop just short of the person
G stop long before reaching the person
H hit the person and go several feet beyond

If you finish before time is called, may check your work on either Part I or Part Two.
**General Directions**

This is a test of some of the understandings, skills, and abilities you have been developing ever since you first entered school. You should take the test in the same way that you would work on any new and interesting assignment. Here are a few suggestions which will help you to earn your best score:

1. **Make sure you understand the test directions before you begin working.** You may ask questions about any part of the directions you do not understand.

2. **You will make your best score by answering every question** because your score is the number of correct answers you mark. Therefore, you should work carefully but not spend too much time on any one question. If a question seems to be too difficult, make the most careful guess you can, rather than waste time puzzling over it.

3. **If you finish before time is called, go back and spend more time on those questions about which you were most doubtful.**
DIRECTIONS FOR PART ONE

Each of the questions or incomplete statements in this test is followed by four suggested answers. You are to decide which one of these answers you should choose.

You must mark all of your answers on the separate answer sheet you have been given; this test booklet should not be marked in any way. You must mark your answer sheet by blackening the space having the same letter as the answer you have chosen. For example:

0 Which one of the following is an animal?
   A Bed
   B Dog
   C Chair
   D Box

Since a dog is an animal, you should choose the answer lettered B. On your answer sheet, you would first find the row of spaces numbered the same as the question—in the example above, it is 0. Then you would blacken the space in this row which has the same letter as the answer you have chosen. See how the example has been marked on your answer sheet.

Make your answer marks heavy and black. Mark only one answer for each question. If you change your mind about an answer, be sure to erase the first mark completely.

Do not turn this page until you are told to do so.
PART ONE

Explanation: As Pam is waiting to board a plane for Mexico City, a middle-aged lady, also a passenger, comes up to her.

PASSENGER: Is this where I wait for the plane to Mexico?

PAM: This is the stand-by room. Have you your ticket?

PASSENGER: Yes, I have my ticket, my birth certificate, my vaccination—

PAM: That’s all right. Certainly you may wait here.

PASSENGER: When does it pull out? I mean go up? Or should I say take off?

PAM: The 7axco leaves at nine-twenty-five a.m.

PASSENGER: That’s right. That’s the one I’m taking. They already have my luggage. Can I depend on them to get it on the plane?

PAM: Absolutely.

PASSENGER: How will I know when it’s time to get on the plane myself?

PAM: They’ll announce the flight through the amplifier.

PASSENGER: If I shouldn’t hear the announcement, will you tell me?

PAM: Yes, ma’am. You need have no worry.

PASSENGER: That’s good. I have plenty of other things to worry about. (Seats herself. . . . As she does so, she drops a package. There is the sound of broken glass.) Fairly. There goes my perfume from my niece. I have a niece and four nephews, and they all gave me going-away presents. I only remembered them at the last minute. Now if I could get what’s left in my bag— (She makes a clumsy effort to set her suitcase on top of the packages.)

PAM: Let me help you. (She takes the packages.)

PASSENGER: Thank you. (She opens overnight bag and takes out a hot-water bottle.) The plane may be chilly. (Takes out an alarm clock.) I have to take medicine every four hours.

1 Which one of the following facts is NOT clear?
A The place from which the plane leaves
B The time the plane leaves
C The way the flight will be announced
D The destination of the plane

2 The writer informs the reader about his main characters through
E what they say about each other
F what they do for each other
G what they say to each other
H what others say about them

3 If Pam had been given more of a part,
A she would have been a different personality
B the passenger would have been a different kind of person
C the emphasis of the play would change
D the ending would be different

4 The passenger is pictured as
E very old and helpless
F generous and thoughtful
G widely traveled
H unable to organize her packing

5 Judging from the conversation, we have reason to believe that the characters are
A a pretty girl and an unattractive older woman
B a little girl and an adult
C two older women
D a poised young woman and a nervous older woman

(They were closing the drugstore, and Alfred Higgins, who had just taken off his white jacket, was putting on his coat and getting ready to go home. The little gray-haired man, Sam Carr, who owned the drugstore, was bending down behind the cash register, and when Alfred Higgins passed him, he looked up and said softly, “Just a moment, Alfred. One moment before you go.”)

(2) The soft, confident, quiet way in which Sam Carr spoke made Alfred start to button his coat nervously. He felt sure his face was white. Sam Carr usually spoke to him brusquely, without looking up. In six months he had been working in the drugstore, and Fred had never heard his employer speak softly like that. His heart began to beat so loudly it was hard for him to get his breath. “What is it, Mr. Carr?” asked.

(3) “Maybe you’d be good enough to take a few things out of your pocket and leave them here before you go,” said Sam Carr.

(4) “What things? What are you talking about?”

(5) “You’ve got a compact and a lipstick and at least two tubes of toothpaste in your pockets, Alfred.”

(6) “What do you mean? Do you think I’m crazy, Alfred blustered. His face got red and he knew he looked fierce with indignation. But Sam Carr, standing by the door with his blue eyes shining bright and his glasses and his lips moving underneath his gray mustache, only nodded his head, and then slowly he raised his hand and dipped it into his pocket, and, with his eyes never meeting Sam Carr’s eyes, took out a blue compact and two tubes of toothpaste and laid them one by one on the counter.

6 How long had Alfred been working at the store?
E It was his first day on the job.
F He was finishing his first week at the store.
G He had been with Mr. Carr six weeks.
H He had worked for Mr. Carr longer than six weeks.

Go on to the next page.
In this story the author seems to
A sympathize with Alfred Higgins
B criticize Sam Carr
C expect the reader to draw his own conclusion about the incident
D recognize the conflict that has existed between employer and employee

The feelings expressed in this story are those of
E Sam Carr
F Alfred Higgins
G both Sam Carr and Alfred Higgins
H neither Sam Carr nor Alfred Higgins

Alfred knew that something was wrong because of Mr. Carr's
A position at the cash register
B brightly shining eyes
C quiet tone
D indignant expression

We are not really certain that Alfred is guilty until
E paragraph 2    F paragraph 3
G paragraph 5    H paragraph 6

1 turn-of-the-century vaudeville, folding beds were
rite comedy props, but the many descendants of e early folding beds are no laughing matter. To-
's smaller homes call for furniture that conserves
xe by serving more than one purpose, and the mod-
"convertibles" are going far toward satisfying that l. They can turn the most proper living room into
rmitory that will sleep nine people. Convertible
ture is giving American homemakers the imaginative engineering, improved design, and remarkable
-production prices associated with home appli-
s. This development has provided the biggest
furnishing news in recent years. In 1940, United
es families spent about 22 million dollars for con-
ible sleep furniture; now, they are spending six
s that amount for beds that hide in the living room
ng the day.

The information in this passage would be of interest to
A housewives    B furniture manufacturers
C buyers for furniture stores    D all of these

It is evident from the article that
E furniture designers are concentrating on the needs of small houses
F today's smaller houses require smaller furniture
G modern bedrooms will have to accommodate more than two persons
H old-fashioned furniture can be converted to fulfill today's requirements

13 Which of the following techniques does the author use to make his presentation of ideas effective?
A Supporting a statement with specific proof
B Giving figures
C Listing advantages    D All of these

14 United States families buy convertible furniture today at an annual cost of
E over 100 million dollars
F 66 million dollars
G 22 million dollars
H 6 million dollars

15 In the sentence beginning in line 7 ("They can turn...") the author is
A adding an entirely new idea to his article
B illustrating the meaning of the preceding sentence
C generalizing from the preceding sentence
D making a general statement which will be followed by an example in the next sentence

1 Think of life as a vast museum; or better, perhaps, as a vast engineering workshop. It is both of those things, among others. Then think of yourself walking through it. You know how you walk through a museum or a workshop when you know nothing in particular about it. You try hard to be intelligent; failing in that, you try to conceal your lack of intelligence. You would like to be interested, but you do not know what is interesting and what is not. Some of the specimens strike you as pretty; some of the engines seem to you very powerful; you are dazzled and amazed by the blaze of the fires; you are secretly interested in the workers and wish you could talk to them. But in the main you come out at the other end tired and rather dispirited and having got remarkably little out of it. That is the way a stupid and uneducated man, with no one to help him, goes through life.

16 It is expected that, as a result of reading this passage, the reader will
E visit museums more often
F respect cultural opportunity
G study art    H conceal his ignorance

17 The author of this selection is stating his belief in the values of
A museums    B engineering workshops
C education    D walking

18 The author of this passage states his point in the
E first sentence (line 1)
F third sentence (lines 3 and 4)
G next to the last sentence (lines 13, 14, and 15)
H last sentence (lines 16 and 17)
Which of the following words best describes the kind of experience the author thinks most people have in touring a museum?

A Unrewarding  
B Informative  
C Inadvisable  
D Amazing

The passage forces the reader to think by

E describing the interior of a museum 
F suggesting that the reader imagine himself walking through a museum  
G comparing a museum to an engineering workshop  
H showing how to profit from a visit to a museum

A flash of bright blue in the green depths of the piney woods caught the eye of wildlife biologist Hilbert Siegler of the Texas Game Commission. Then a second spot of blue stirred, as another jay sailed on silent wings to the same branch. The newcomer, holding a morsel of food in its beak, hopped closer to the first bird. Turning eagerly, the first jay lifted its crested head and accepted hungrily the gift its visitor poked down into its throat.

Siegler was astonished. In fledging season, young birds often continue coaxing food from their parents even after they have grown up; in courting season, bird swains often bestow dainties upon the females they are wooing. But this wasn’t the season for fledglings, nor was it courting time. This was the dead of winter.

Hastily the wildlife expert raised his binoculars and got the answer. The recipient of the bounty was an adult jay, a grizzled veteran. The lower mandible of its beak had been broken off nearly at the base. It had no way to pick up food.

This impulse to share and cooperate is familiarly awakened in creatures of the wild by members of their immediate families. But here seemed to be something close to the human ideal of brotherhood.

Nature’s creatures often exhibit impulses of self-assertion and competition. But all through life’s vast range, these instincts are balanced by another kind of drive. Nature does not implant in her children just the single message: “Take care of yourself.” There is a second and universal injunction: “Get together.” It is as vital as the breath of life.

What kind of blue jay was fed?

A A fledgling  
B An old blue jay, too weak to hunt his own food  
C An injured adult blue jay  
D A courted female

The author does NOT state

E who the wildlife biologist is  
F how the bird was injured  
G what the jay’s injury is  
H what time of year it is

Which of the following titles is most appropriate?

A “Animals Help Each Other”  
B “Blue Jays in Winter”  
C “A Walk in the Woods”  
D “Feeding Birds Throughout the Year”

The author supports his main idea by

E citing an example  
F comparing different animals  
G showing cause and effect  
H quoting more than one authority

Paragraph 4 suggests that the author

A disapproves of the behavior he described in paragraph 1  
B thinks blue jays have little regard for each other  
C regards most interpretations of animal behavior with suspicion  
D admires what Hilbert Siegler saw

Dear Boy:

People unused to the world have babbling con
cences, and are unskillful enough to show what
have sense enough not to tell. In the course of
world, a man must very often put on an easy, fre
countenance, upon very disagreeable occasions;
must seem pleased, when he is very much otherwise;
he must be able to accost and receive with smiles the
whom he would much rather meet with swords; his
courts must not turn himself inside out. All
may, nay, must be done, without falsehood and tre
ery; for it must go no further than politeness and man
ers, and must stop short of assurances and profess
of simulated friendship. Good manners to those
does not love are no more a breach of truth than “
humble servant,” at the bottom of a challenge, is;
are universally agreed upon and understood to
things of course. They are necessary guards of the
cency and peace of society: they must only act de
sively; and then not with arms poisoned with perf
Truth, but not the whole truth, must be the invari
principle of every man who hath either religion, ho
or prudence.

God bless you.

The reader may judge from this letter that the
or
E has had wide experience  
F understands himself but not others  
G lacks the ability to reach a conclusion  
H is dishonest in his dealings with others

The tone of this letter seems to be one of

A biting sarcasm  
B pleasant humor  
C earnest persuasion  
D quiet complacency

Go on to the next part.
The author of the letter cautions his son to
1 deal honorably with servants
2 pretend friendship with his enemies
3 mask his true feelings behind a socially acceptable manner
4 guard his speech lest he be misunderstood

The author uses “your humble servant” in lines 4 and 15 to illustrate that
5 politeness reduces the frictions of daily living
6 formal expressions need not reflect true feelings
7 good manners spring from good breeding
8 modesty is the chief ingredient of courtesy

The first sentence makes the point that
9 talkative people often babble a lot of nonsense
10 unsophisticated people often give their thoughts away without intending to
11 sophisticated people have sense enough not to
tell what they think
12 you can’t tell from a person’s countenance what he is thinking

City Sparrow

Who’s that dusty stranger? What’s he doing here? at city-bred bird with the ill-bred leer?
ching on branches like telegraph wires?
irping his slang above passionate fires?
ring his head about, twitching his tail,
ring drunk in our pools as if they were ale?
er accepting, but stealing our rations?
toward us as he would to relations?
a asked him hither, what led him this way?
his critical carping, his mockery, eh?
’d worse than all these, he’s a jerky reminder winters, of towns, and of people no kinder.

31 The speaker reveals his attitude toward the city sparrow in which of the following words?
A Ill-bred
B Stealing
C Mockery
D All of these

32 The underlying humor of this poem lies in
E pointing out the bird’s faults
F asking questions of a bird
G describing the bird’s antics
H attributing human traits to a bird

33 The “dusty stranger” is resented most of all because he
A is a reminder of unpleasant things
B makes too much noise
C came uninvited
D pokes his head in other people’s business

34 We may infer that the speaker who asks the questions is intended to be
E the author
F a bird lover
G a country bird
H a farmer

35 The questions in the poem
A call for no answer
B call attention to the bird’s impertinence
C describe the bird’s behavior
D do all of these things

Stop. If you finish before time is called, check your work on this part. Do not go on to Part Two until you are told to do so.
PART TWO

"To every thing there is a season," says the Bible.
"A time to plant, and a time to pluck . . . " But what is
the time" for planting grass seed?

Experts don't get into squabbles on this point. In
the South, spring is the time to plant. In the North,
the situation is just the reverse. Here the ideal time is
early fall—say between August 15 and September 15,
depending upon when you expect the ground to freeze
hard. Grasses planted at this time face little competition
from weeds and have plenty of time to become
strong and healthy so they can endure the heat of the
following summer. If you can't get around to planting
in the fall, however, you can still grow a good lawn if
you'll hustle in early spring—just as soon as you can
spade the ground.

If you live in the South and didn't finish your soil
preparation in time for spring planting, let the yard
alone until September. Then sow it with rye grass.
The next spring, plant Bermuda grass, carpet grass,
or whatever other kind of permanent grass you want.
If you live in the North and face a similar situation,
you may, just to give the yard a covering, plant rye
gress right away and then spade it under the following
fall and sow permanent grasses. When turned under,
temporary grasses decay and add valuable humus
to the soil.

Whether you live in the North or in the South, the
principles of preparing the seedbed and sowing seed
are about the same. A few days before you intend to
plant, give the soil a liberal dose of commercial fertilizer
and rake it well into the soil. Select any analysis
which contains at least 20 pounds of nutrients per 100-
pound bag and which is fairly high in nitrogen.

1 The author includes paragraph 4 because
A the time for preparing the bed and planting the
seed is the same in the North and the South
B various types of seed require different soil content
C the preparation of the soil is important to a lawn
D a lawn needs constant care

2 The author states that in the North it is possible to
plant grass seed
E only in the fall     F only in the spring
G either in the spring or in the fall
H in any season

3 In addition to the information given in the pas-
sage, anyone planting a lawn would need to know
A the names of particular grasses
B the amount of seed to use
C the type of fertilizer to use
D the time seed should be planted

4 The tone of this passage is
E whimsical     F brusque
G condescending H informal

5 In this passage, the author's chief purpose is
A help the reader plant a good lawn
B show the connection between planting
and the biblical quotation
C explain climatic differences between the I
and the South
D give a satisfactory formula for soil feeding

A paleontologist walks down a ravine or along
side of a bluff. A tiny point of bone catches his
eyes. Then he begins to expose it. Perhaps that
moment may lead him to an entire skeleton, or a
dozen. I had exactly that experience in the Gobi
Desert. While exploring a low sandstone ridge, I dis-
covered a bit of bone, no larger than my finger, projec-
ing above the surface. Carefully scraping away the
sediment, I saw it was just the tip of a large, deep-
bleded piece. That was enough, for I am too
patient to remove fossils properly. I called Dr. V
Granger, our chief paleontologist. He began with
a shovel, but with a whisk broom, a camel's
brush, and small steel implements. In a few hours
had exposed half a dozen bones. Eventually that
post developed into a "quarry" where ten or
fifteen dinosaurs had been swept into the backwater of
the river and their skeletons preserved. We worked the
weeks. All because I happened to discover that
point of bone. It is an axiom that a paleontolo-
gist digs for bones unless he sees them.

6 In this passage, the author tells
E how a bone fragment led to a collection of
saur fossils
F what the training of a paleontologist is
G where to look for fossils
H what a dinosaur is

7 The author wrote this passage to show
A how accidental some scientific discoveries
B the types of instruments used by paleonto-
lologists
C how difficult exploration in the Gobi De-
sert is
D how bones are preserved as fossils

8 To prove his axiom, the author uses
E picturesque speech
F quotations from authorities
G definitions of terms
H an illustration from his own experience

9 One point the passage fails to mention is
A how much time it took to dig the fossils
B whether training is needed for the work
C what will happen to the uncovered fossil
D who the head paleontologist is

10 Where did the author make his discovery?
E In a ravine     F In a quarry
G On a ridge     H On a lake shore

Go on to the next
P. T. Barnum

3arnum to General Ulysses S. Grant

ed Sir: The whole world honors and respects
All are anxious that you should live happy and
om care. While they admire your manliness in
ing the large sum recently tendered you by
, they still desire to see you achieve financial in-
dence in an honorable manner. Of the unique
tuable trophies with which you have been hon-
e all have read, and all have a laudable desire to
se evidences of love and respect bestowed upon
monarchs, princes, and people throughout the

you would confer a great and enduring favor on
owmen and women by permitting them to see
phies, you could also remove existing embar-
ts in a most satisfactory and honorable man-
will give you one hundred thousand dollars
ides a proportion of the profits, if I may be
ed to exhibit these relics to a grateful and ap-
ive public, and I will give satisfactory bonds of
illion dollars for their safe-keeping and return.
precious trophies of which all your friends are so
would be placed before the eyes of your millions
ers in a manner and style at once pleasing to
and satisfactory to the best elements of the en-
munity. Remembering that the mementoes of
pton, Napoleon, Frederick the Great, and many
istingished men have given immense pleasure
ons who have been permitted to see them, I trust
ll in the honorable manner proposed, gratify the
and thus inculcate the lesson of honesty, perse-
ce, and true patriotism so admirably illustrated
areer.

the honor to be truly your friend and admirer,

P. T. Barnum

11 In writing the letter, Barnum wanted most to im-
press Grant with his
A admiration
B sympathy
C showmanship
D patronage

12 Barnum apparently hopes to influence Grant
chiefly by
E being direct
F reminding him of his duty
G pleading his own cause
H flattering him

13 As an inducement to permit the exhibition of his
relics, Barnum offers Grant
A a lump sum and part of the profits
B fame
C equal partnership
D government bonds worth $100,000

14 Barnum’s proposal was probably prompted by
E his admiration of great personages
F his shrewd business sense
G a desire to display educational exhibits
H his wish to give the same prominence to Grant’s
trophies as had been given to those of Washing-
ton and Napoleon

15 By “existing embarrassments” (in paragraph 2),
Barnum means
A Grant’s hesitation to appear conceited
B Grant’s need of money
C Grant’s need of a place to keep his trophies
D Grant’s reluctance to display his mementoes

Go on to the next page.
One morning I walked into the office and the bookkeeper was putting on her hat and coat and tears were coming out of her eyes. It was April and what did I care if I was only a fifteen-dollar-a-week clerk. Didn’t I have a new hat and a new pair of shoes and wasn’t I going down to Monterey tomorrow? I stopped whistling and looked around.

“Good morning, Mrs. Gilpley,” I said.

“Good morning, Joe,” she said.

Mrs. Gilpley was an old lady and she had a mustache and she was stoop-shouldered, and nobody liked Mrs. Gilpley, but it was April in the world and maybe I didn’t exactly love her, but she was a goodhearted old lady, and I couldn’t just go and hang up my hat and start another day. I had to talk to her.

“Mrs. Gilpley,” I said, “is something the matter?”

She pointed to the partly open door of Mr. Wylie’s private office.

“Mrs. Gilpley,” I said, “you haven’t lost your job, have you?”

“I’ve resigned,” she said.

Mrs. Gilpley’s salary was twenty-seven-fifty per week. It was eight a week when she first started working for the company. They taught me to do Mrs. Gilpley’s work. My salary was fifteen a week, so they were giving the old lady the gate. Well, I wanted to go down to Monterey and I felt fine in a new pair of three-dollar shoes and a new hat, but I didn’t like the idea of making Mrs. Gilpley cry at her age.

“Mrs. Gilpley,” I said, “I came in this morning to quit my job. I got an uncle in Portland who’s opening a grocery store and I’m going up there to handle his accounts for him.”

“Joe,” Mrs. Gilpley said, “you know you ain’t got no uncle in Portland.”


“Joe,” Mrs. Gilpley said, “you go on now and hang up your hat and go to work.”

I walked straight into Mr. Wylie’s office. “Mr. Wylie,” I said, “I’m quitting my job beginning this morning.”

“What’s that?” he said.

“I’m quitting,” I said.

“What for?” he said.

“I ain’t getting enough money,” I said.

“How much do you want?” he said.

Boy, was I surprised? I figured I’d have to ask for plenty to make him throw me out, so I did.

“I want thirty dollars a week,” I said.

“But you’re only eighteen,” he said. “Such a salary would be a little premature, but perhaps we can arrange it.”

If I had tried to put over a thing like that, it would have worked.

“No,” I said. “I’m quitting.”

“Why are you quitting?” he said. “I thought your work.”

“I used to,” I said. “But I don’t any more.”

“Wylie,” I said, “did you fire Mrs. Gilpley?”

Mr. Wylie leaned back in his chair and looked at me.

“Young man,” he said, “a check will be made for you in full this morning. You’re fired!”

16 The real reason Joe quit his job was
E to go to Monterey
F to help Mrs. Gilpley
G to work for his uncle in Portland
H to force Mr. Wylie to pay him more

17 From Joe’s actions, one may judge him to
A a generous, impulsive young man
B a headstrong, rebellious young man
C an indifferent, lazy worker
D a stubborn fellow, unwillting to compromise

18 The author wants the reader to
E feel critical of Joe
F like Joe
G pity Joe
H condemn Joe

19 The author’s underlying attitude is one of
A suspicion of people’s motives
B enthusiasm for the human race
C interest in problems of capital and labor
D fascination with psychological analysis

20 The style of conversation is meant chiefly
E plain and blunt
F picturesque and arresting
G idiomatic and typical of office workers
H simple and natural
was an Indian, who had known no change, 
strayed content along a sunlit beach 
eringshells. He heard a sudden strange 
mixed noise; looked up; and gasped for speech. 

The bay, where nothing was before, 
ed on the sea, by magic, huge canoes, 
bellying cloths on poles, and not one oar, 
fluttering colored signs and clambering crews. 

In fear, this naked man alone, 
all his hands forgetting all their shells, 
gone pale, knelt low behind a stone, 
starred, and saw, and did not understand, 
mbus's doom-burdened caravels 
to the shore, and all their seamen land.

The reaction of the Indian is shown in
A lines 1-2  
B lines 5-8  
C lines 9-12  
D lines 13-14

The "bellying cloths" (line 7) must have been
A full sails  
B Columbus's ensign  
C the seamen's laundry  
D the Spanish flag

The details in the first sentence were chosen to
create a feeling of
A suspense  
B wonder  
C peace  
D delight

When the Indian saw the ships, he
A went on gathering shells  
B hid behind a stone  
C looked up  
D went to greet the men

The author presents an unusual image in the
words
A "There was an Indian" (line 1)  
B "His lips gone pale" (line 11)  
C "and did not understand" (line 12)  
D "caravels / Slant to the shore" (lines 13-14)

The style of sporting-news stories is marked by the
use of terms peculiar to the game or sport and often by 
the slang that is popular at the time, particularly the 
slang that is in vogue among those interested in each

Young reporters, and some older ones too, seem 
to think that they can best prove their knowledge of 
sports by using in their stories as much as possible of 
the slang current among the professionals and their 
followers in the sport. On the other hand, some of the 
recognized authorities on sports write interesting and 
readable accounts of contests without indulging in 
such sporting slang. A number of sports editors, in 
order to give variety to their daily reports of baseball 
games, have sought to coin new phrases and figures 
of speech, and the result has sometimes been so clever 
and amusing that these writers have established a con-
siderable reputation for novelty of expression. Too fre-
quently, however, the imitations of the work of the suc-

Originality of expression is as desirable in sporting-
news stories as it is elsewhere, but a style that is marked 
by little more than cheap humor and vulgar slang has 
nothing to commend it.

26 In this passage, the style of the writing seems
A self-contradictory  
B inconsistent  
C rigid  
D straightforward

27 Which one of the following headlines would the 
author most likely approve?
A State and Tech in Pigskin Parade  
B Pigskin Maulers of State and Tech Clash  
C Tech and State Tangle Today  
D Tech and State Play Big Game

28 In order to develop his thesis, the author depends 
upon
A sarcasm  
B reasoning  
C humor  
D all of these

29 It is the author's opinion that
A young sports reporters are more original than 
established writers  
B young reporters should try to imitate older 
writers  
C more clever expressions are needed in sporting-
news stories  
D simple, direct sports reporting is always desir-
able

30 A young reporter may assume from this par-
graph that to write acceptably he should
A use good taste  
B have a large vocabulary  
C organize his material logically  
D always be original
(Scene: The kitchen in the farmhouse of John Wright, who has been found murdered in his bedroom. The sheriff, the county attorney, Mr. and Mrs. Hale, and Mrs. Peters are moving about the disordered room. The men are searching for evidence; the women, gathering clothing for Mrs. Wright, who is in jail charged with the crime.)

COUNTY ATTORNEY: Here's a nice mess.
(The women draw nearer.)

MRS. PETERS (to the other woman): Oh, her fruit; it did freeze. She worried about that when it turned so cold.

SHERIFF: Well, can you beat the women! Held for murder and worryin' about her preserves.

COUNTY ATTORNEY: I guess before we're through she may have something more than preserves to worry about.

HALE: Well, women are used to worrying over trifles.
(The two women move a little closer together.)

COUNTY ATTORNEY (with the gallantry of a young politician): And yet, for all their worries, what would we do without the ladies? (The women do not unbend. He looks about.) Dirty towels! Not much of a housekeeper, would you say, ladies?

MRS. HALE: Those towels get dirty awful quick. Men's hands aren't always as clean as they might be.

COUNTY ATTORNEY: Ah, loyal to your sex, I see. But you and Mrs. Wright were neighbors. I suppose you were friends, too.

MRS. HALE: (shaking her head): I've not seen much of her of late years. I've not been in this house—it's more than a year.

COUNTY ATTORNEY: And why was that? You didn't like her?

MRS. HALE: I liked her well enough. But—it never seemed a very cheerful place.

COUNTY ATTORNEY: You mean they didn't get on very well?

MRS. HALE: No, I don't mean anything. But I don't think a place'd be any cheerfuller for John Wright's being in it.

31 Mrs. Hale would have visited the Wrights
A she had not been so busy in her own home
B John Wright had been more pleasant
C Mrs. Wright had stayed at home
D Mr. and Mrs. Wright had got along better

32 The stage direction in line 19 is effective because it shows that
E the women are hiding something from the men
F the kitchen is cold
G the women take sides against the men
H the women disagree with each other

33 What we know of the Wrights is brought out in the conversation between
A the sheriff and the county attorney
B Mr. Hale and the county attorney
C Mrs. Hale and the county attorney
D Mrs. Hale and the sheriff

34 In line 22, “The women do not unbend” that they do not
E change their attitude
F agree with the county attorney
G change their posture
H wish to be distracted

35 The author advances the plot by
A showing how the men felt about Mr. Wright
B suggesting that a struggle had taken place in the disordered kitchen
C showing that the county attorney mixes work with pleasure
D giving the reader a clue to the motive for the murder