CHAPTER 10

Intelligence

CHAPTER OVERVIEW

An enduring controversy in psychology involves attempts to define and measure intelligence. Chapter 10 discusses whether intelligence is a single general ability or several specific ones as well as research that attempts to assess the neurological basis of intelligence. It also describes the historical origins of intelligence tests and discusses several important issues concerning their use. These include the methods by which intelligence tests are constructed and whether such tests are valid, reliable, and free of bias. The chapter also explores the stability of intelligence and the extent of genetic and environmental influences on intelligence.

NOTE: Answer guidelines for all Chapter 10 questions begin on page 245.

CHAPTER REVIEW

First, skim each section, noting headings and boldface items. After you have read the section, review each objective by answering the fill-in and essay-type questions that follow it. As you proceed, evaluate your performance by consulting the answers beginning on page 245. Do not continue with the next section until you understand each answer. If you need to, review or reread the section in the textbook before continuing.

What Is Intelligence? (pp. 431–442)

Objective 1: Discuss the difficulty of defining intelligence, and explain what it means to reify intelligence.

1. Psychologists _______________ (do/do not) agree on a definition of intelligence.

2. To regard an abstract concept as a concrete entity is to commit the error known as
   ___________________. By doing this, we are viewing intelligence as something a person has,
   rather than a score obtained on an
   ___________________.

3. Intelligence is a _______________ constructed concept.

4. In any context, intelligence can be defined as
   ___________________.

5. One controversy regarding the nature of intelligence centers on whether intelligence is one
   _______________ ability or several
   _______________ abilities.

Objective 2: Present arguments for and against considering intelligence as one general mental ability.

6. The statistical procedure used to identify groups of items that appear to measure a common ability is called _______________
   _______________.

7. Charles Spearman, one of the developers of this technique, believed that a factor called g, or _______________
   _______________, runs through the more specific aspects of intelligence.

8. Opposing Spearman, _______________
   identified seven clusters of _______________
   _______________.

9. One psychologist believes that general intelligence evolved as a means of helping people solve
   ___________________ _______________.

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Objective 3: Compare Gardner’s and Sternberg’s theories of intelligence.

10. People with ________________ score at the low end of intelligence tests but possess extraordinary specific skills.

11. Howard Gardner proposes that there are ________________, each independent of the others. However, critics point out that the world is not so just: General intelligence scores ________________ (do/do not) predict performance on various complex tasks and in various jobs.

12. Sternberg’s ________________ theory distinguishes three types of intelligence: ________________ intelligence, ________________ intelligence, and ________________ intelligence.

Objective 4: Identify the factors associated with creativity, and describe the relationship between creativity and intelligence.

13. The ability to produce ideas that are both novel and valuable is called _________________. The relationship between intelligence and creativity holds only up to a certain point—an intelligence score of about _________________.

14. Standard intelligence tests, which demand single correct answers to questions, measure ________________ thinking. Tests that allow multiple possible answers to problems measure ________________ thinking.

Describe five components of creativity other than intelligence.

Objective 5: Describe the three aspects of emotional intelligence, and discuss criticisms of this concept.

15. The know-how involved in comprehending social situations and managing oneself successfully differs from ________________ intelligence and is referred to as ________________ intelligence.

16. A critical part of social intelligence is ________________—the ability to ________________, ________________, ________________, and ________________ emotions.

17. More specifically, the four components of emotional intelligence are as follows: the ability to ________________ emotions in faces, the ability to ________________ them and how they change and blend, the ability to ________________ them correctly in varied situations, and the ability to use them to enable ________________ or creative thinking.

Briefly describe emotionally intelligent people.

18. Some scholars believe that the concept of ________________ intelligence stretches the idea of multiple intelligences too far.

Objective 6: Describe the relationship between intelligence and brain anatomy.

19. Earlier studies ________________ (did/did not) reveal a clear-cut correlation between head size (relative to body size) and intelligence score.

20. Newer studies that measure brain ________________ using ________________ scans reveal a ________________ (more/less) significant correlation between brain size (adjusted for body size) and intelligence score. The cause of this could be differing ________________, nutrition, ________________, ________________, or some combination of these.
21. A study of Einstein’s brain revealed that it was 15 percent larger in the lower
__________________ lobe—known to be an
important neural center for processing
__________________ and __________________
information.

22. Postmortem analyses reveal that the brains of
highly educated people have more ____________
than do those of people with less education.
Other evidence suggests that highly intelligent
people differ in their neural ________________ .
Higher intelligence scores have also been linked
with more _____________________ in brain areas known to be involved in
__________________, __________________, and ____________________ .

Objective 7: Discuss findings on the correlations
among perceptual speed, neural processing speed,
and intelligence.

23. When people ponder intelligence test questions,
for example, an area in the brain’s
__________________ becomes especially active in the ____________
(left/right) brain for verbal questions and
__________________ (in the right brain/in the
left brain/on both sides of the brain) for spatial
questions. People who are able to more quickly
retrieve information from memory tend to score
high in __________________ ability.

24. Studies looking at a range of tasks have found
that people with high intelligence scores tend to
process and retrieve information
__________________ (faster/more slowly) than
people with low intelligence scores.

25. Other studies have found that the brain waves of
highly intelligent people register simple stimuli
more ________________ and with greater
__________________ .

Assessing Intelligence (pp. 415–427)

Objective 8: Discuss the history of intelligence
testing.

1. The early Greek philosopher
__________________ concluded that individuals
differed in their natural endowments.

2. Although Francis Galton’s search for a simple
intelligence measure failed, he gave us some
__________________ techniques that we still use,
as well as the terms ________________ and
__________________ .

3. The French psychologist who devised a test to
predict the success of children in school was
______________ . Predictions were made by
comparing children’s chronological ages with
their ________________ ages, which were
determined by the test. This test
______________ (was/was not) designed to
measure inborn intelligence; Binet leaned toward
an ________________ explanation of intelligence.

4. Lewis Terman’s revision of Binet’s test is referred
to as the ________________ .
This test enables one to derive a(n)
______________ for an
individual.

Give the original formula for computing IQ, and
explain any items used in the formula.

5. Today’s tests compute ________________ (IQ/
an intelligence test score) by comparing the indi-
vidual’s performance to the average performance
of people of ________________ (the same/dif-
ferent) age(s). These tests are designed so that a
score of ________________ is considered aver-
age.

6. The misguided movement called
______________ proposed measuring
human traits and using the results to determine
who should be allowed to reproduce.
7. When given intelligence tests in the early 1900s, immigrants arriving in the United States often scored ____________ (above/below) average. This is because the tests were based on a particular ____________ background.

Objective 9: Distinguish between aptitude and achievement tests, and describe modern tests of mental abilities such as the WAIS.

8. Tests designed to measure what you already have learned are called ____________ tests. Tests designed to predict your ability to learn something new are called ____________ tests.

9. The most widely used intelligence test is the _____________.

Consisting of 11 subtests, it provides not only a general intelligence score but also separate scores for ____________

___________

___________

___________

___________

___________

___________

Consisting of 11 subtests, it provides not only a general intelligence score but also separate scores for ____________

___________

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___________

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___________

12. The Stanford-Binet and the Wechsler Scales ____________ (are/are not) periodically restandardized, thereby keeping the average score near ____________.

13. During the 1960s and 1970s, college entrance aptitude scores showed a steady ____________ (increase/decline). At the same time, intelligence test performance ____________ (improved/decreased). This phenomenon is called the ____________.

14. Although the actual cause of this effect is unknown, one explanation is that is due to improved _____________. The recent performance gains on the WAIS are greatest among people at the lowest ____________ levels.

Objective 11: Explain the meanings of reliability and validity in terms of test construction, and describe two types of validity.

15. If a test yields consistent results, it is said to be ____________.

16. When a test is administered more than once to the same people, the psychologist is determining its ____________ reliability.

17. When a person’s scores for the odd- and even-numbered questions on a test are compared, ____________ reliability is being assessed.

18. The Stanford-Binet, WAIS, and WISC have reliabilities of about ____________ .

19. The degree to which a test measures or predicts what it is supposed to is referred to as the test’s ____________.

20. The degree to which a test measures the behavior it was designed to measure is referred to as the test’s ____________.

21. The degree to which a test predicts future performance of a particular behavior, called the test’s ____________, is referred to as the test’s ____________.
Choose a specific example and use it to illustrate and explain the concept of criterion and its relationship to predictive validity.

22. Generally speaking, the predictive validity of general aptitude tests ________________ (is/is not) as high as their reliability. The predictive validity of these tests ________________ (increases/diminishes) as individuals move up the educational ladder.

The Dynamics of Intelligence (pp. 422–427)

Objective 12: Describe the stability of intelligence scores over the life span.

1. Some studies have found that infants who quickly become bored when looking at a picture score ________________ (higher/lower) on tests of brain speed and intelligence up to 21 years later.

2. Traditional intelligence tests before age ________________ predict future aptitudes only modestly.

3. During childhood, the stability of intelligence scores ________________ (increases/decreases) with age. After about age ____________, intelligence scores stabilize. A long-term study of mental ability in Scottish children revealed that this ________________ (holds/does not hold) through late adulthood.

Objective 13: Describe the two extremes of the normal distribution of intelligence.

4. Individuals whose intelligence scores fall below 70 and who have difficulty adapting to life may be labeled ________________.

5. Mental retardation sometimes has a physical basis, such as ________________, a genetic disorder caused by an extra chromosome.

6. The current view is that children with mild retardation should be integrated, or ________________, into regular classrooms.

7. At the high extreme, Lewis Terman’s “gifted children” turned out to be ________________, well-______________, and unusually successful ________________.

Discuss criticisms of programs that sort children into gifted and nongifted tracks.

Genetic and Environmental Influences on Intelligence (pp. 427–439)

Objective 14: Discuss the evidence for the genetic contribution to individual intelligence, and explain what psychologists mean by the heritability of intelligence.

1. The intelligence scores of identical twins reared together are ________________ (more/no more) similar than those of fraternal twins. Brain scans also reveal that identical twins have similar volume to their brain’s ________________, and those areas associated with ________________ and ________________ intelligence.

2. Because intelligence is influenced by many genes, it is said to be ________________.

3. The intelligence test scores of fraternal twins are ________________ (more alike/no more alike) than the intelligence test scores of other siblings.
This provides evidence of a(n) _____________ effect because fraternal twins, being the same ________________, are treated more alike.

4. Studies of adopted children and their adoptive and biological families demonstrate that with age, genetic influences on intelligence become ________________ (more/less) apparent. Thus, children’s intelligence scores are more like those of their ________________ (biological/adoptive) parents than their ________________ (biological/adoptive) parents.

5. The amount of variation in a trait within a group that is attributed to genetic factors is called its ________________. For intelligence, this has been estimated at ________________ percent.

6. If we know a trait has perfect heritability, this knowledge ________________ (does/does not) enable us to rule out environmental factors in explaining differences between groups.

Objective 15: Discuss the evidence for environmental influences on individual intelligence.

7. Studies indicate that neglected children ________________ (do/do not) show signs of recovery in intelligence and behavior when placed in more nurturing environments. Although normal brain development can be retarded by ________________, ________________ deprivation, and ________________, there is no sure environment that will transform a normal baby into a genius.

8. High-quality programs for disadvantaged children, such as the government-funded ________________ program, increase children’s school readiness; that is, they increase their ________________ ________________, creating better attitudes toward learning.

Objective 16: Describe gender differences in abilities.

9. Girls tend to outscore boys on ________________ tests and are more ________________ fluent. They also have an edge in ________________ and ________________ objects, in sensation, and in ________________-detecting ability.

10. Although girls have an edge in math ________________, boys score higher in math ________________. Boys tend to outscore girls on tests of ________________ ________________.

11. Working from an ________________ perspective, some theorists speculate that these gender differences in spatial manipulation helped our ancestors survive.

12. There is evidence that spatial abilities are enhanced by high levels of ________________ ________________ during prenatal development.

13. According to many, boys’ and girls’ interests and abilities are shaped in large part by ________________ and divergent opportunities. The mental ability scores of males tend to vary ________________ (less/more) than those of females.

Objective 17: Describe ethnic similarities and differences in intelligence test scores, and discuss some genetic and environmental factors that might explain them.

14. Group differences in intelligence scores ________________ (do/do not) provide an accurate basis for judging individuals. Individual differences within a race are ________________ (greater than/less than) between-race differences.

Explain why heredity may contribute to individual differences in intelligence but not necessarily contribute to group differences.
15. Under the skin, the races ________________
(are/are not) alike. Race ________________
(is/is not) a neatly defined biological category.

16. Although Asian students on the average score
_______________ (higher/lower) than North
American students on math tests, this difference
may be due to the fact that ________________

_______________.

17. On an infant intelligence measure (preference for
looking at novel stimuli), Black infants score
_______________ (lower/higher than/as
well as) White infants.

Objective 18: Discuss whether intelligence tests
are biased, and describe the stereotype threat
phenomenon.

18. In the sense that they detect differences caused by
cultural experiences, intelligence tests probably
_______________ (are/are not) biased.

19. Most psychologists agree that, in terms of predic-
tive validity, the major aptitude tests
_______________ (are/are not) racially
biased.

20. When women and members of ethnic minorities
are led to expect that they won’t do well on a test,
a ________________ may result, and their scores may actually be lower.

PROGRESS TEST 1

Multiple-Choice Questions

Circle your answers to the following questions and
check them with the answers beginning on page 247.
If your answer is incorrect, read the explanation for
why it is incorrect and then consult the appropriate
pages of the text (in parentheses following the correct
answer).

1. Studies of adopted children and their biological
and adoptive families demonstrate that with age,
 genetic influences on intelligence
a. become more apparent.
b. become less apparent.
c. become more difficult to disentangle from
 environmental influences.

d. become easier to disentangle from environ-
mental influences.

2. A 6-year-old child has a mental age of 9. The
child’s IQ is
a. 96.  c. 125.
b. 100.  d. 150.

3. Which of the following is NOT true?
   a. In math grades, the average girl typically
      equals or surpasses the average boy.
   b. The gender gap in math and science scores is
      increasing.
   c. Women are better than men at detecting emo-
      tions.
   d. Males score higher than females on tests of
      spatial abilities.

4. Most psychologists believe that racial gaps in test
scores
   a. have been exaggerated when they are, in fact,
      insignificant.
   b. indicate that intelligence is in large measure
      inherited.
   c. are in large measure caused by environmental
      factors.
   d. are increasing.

5. Standardization refers to the process of
   a. determining the accuracy with which a test
      measures what it is supposed to.
   b. defining meaningful scores relative to a represen-
      tative pretested group.
   c. determining the consistency of test scores
      obtained by retesting people.
   d. measuring the success with which a test pre-
      dicts the behavior it is designed to predict.

6. Down syndrome is normally caused by
   a. an extra chromosome in the person’s genetic
      makeup.
   b. a missing chromosome in the person’s genetic
      makeup.
   c. malnutrition during the first few months of
      life.
   d. prenatal exposure to an addictive drug.

7. Which of the following is NOT a requirement of a
good test?
   a. reliability  c. reification
   b. standardization  d. validity
8. First-time parents Geena and Brad want to give their baby’s intellectual abilities a jump-start by providing a super enriched learning environment. Experts would suggest that the new parents should
   a. pipe stimulating classical music into the baby’s room.
   b. hang colorful mobiles and artwork over the baby’s crib.
   c. take the child to one of the new “superbaby” preschools that specialize in infant enrichment.
   d. relax, since there is no surefire environmental recipe for giving a child a superior intellect.

9. Which of the following statements is true?
   a. The predictive validity of intelligence tests is not as high as their reliability.
   b. The reliability of intelligence tests is not as high as their predictive validity.
   c. Modern intelligence tests have extremely high predictive validity and reliability.
   d. The predictive validity and reliability of most intelligence tests is very low.

10. Before about age ______ , intelligence tests generally do not predict future scores.
    a. 1       c. 5
    b. 3       d. 10

11. Sorting children into gifted and nongifted educational groups
    a. creates a self-fulfilling prophecy.
    b. increases social isolation between the groups.
    c. promotes racial segregation and prejudice.
    d. has all of these effects.

12. Which of the following best describes the relationship between creativity and intelligence?
    a. Creativity appears to depend on the ability to think imaginatively and has little if any relationship to intelligence.
    b. Creativity is best understood as a certain kind of intelligence.
    c. The more intelligent a person is, the greater his or her creativity.
    d. A certain level of intelligence is necessary but not sufficient for creativity.

13. Studies of infants show that babies who quickly become bored with a picture
    a. often develop learning disabilities later on.
    b. score lower on infant intelligence tests.
    c. score higher on intelligence tests many years later.
    d. score very low on intelligence tests many years later.

14. The existence of ______ reinforces the generally accepted notion that intelligence is a multidimensional quality.
    a. adaptive skills       c. general intelligence
    b. mental retardation    d. savant syndrome

15. Which of the following provides the strongest evidence of the role of heredity in determining intelligence?
    a. The IQ scores of identical twins raised separately are more similar than those of fraternal twins raised together.
    b. The intelligence scores of fraternal twins are more similar than those of ordinary siblings.
    c. The intelligence scores of identical twins raised together are more similar than those of identical twins raised apart.
    d. The intelligence scores of adopted children show relatively weak correlations with scores of adoptive as well as biological parents.

16. Current estimates are that ______ percent of the total variation among intelligence scores can be attributed to genetic factors.
    a. less than 10       c. about 50
    b. approximately 25   d. 75 and over

17. Over the past 80 years, college aptitude test scores have ______ and WAIS scores have ______.
    a. declined; remained stable
    b. remained stable; declined
    c. risen; declined
    d. declined; risen

18. Reported racial gaps in average intelligence scores are most likely attributable to
    a. the use of biased tests of intelligence.
    b. the use of unreliable tests of intelligence.
    c. genetic factors.
    d. environmental factors.

19. The bell-shaped distribution of intelligence scores in the general population is called a
    a. g distribution.
    b. standardization curve.
    c. bimodal distribution.
    d. normal distribution.
20. Research on the effectiveness of Head Start suggests that enrichment programs
a. produce permanent gains in intelligence scores.
b. improve school readiness and may provide a small boost to emotional intelligence.
c. improve intelligence scores but not school readiness.
d. produce temporary gains in intelligence scores.

Matching Items

Match each term with its definition or description.

Terms

1. intelligence test score
2. g
3. eugenics
4. savant syndrome
5. factor analysis
6. aptitude test
7. achievement test
8. Stanford-Binet
9. criterion
10. content validity
11. reliability

Definitions or Descriptions

a. a test designed to predict a person’s ability to learn something new
b. a test designed to measure current knowledge
c. the consistency with which a test measures performance
d. the degree to which a test measures what it is designed to measure
e. Terman’s revision of Binet’s original intelligence test
f. the behavior that a test is designed to predict
g. an underlying, general intelligence factor
h. a person’s score on an intelligence test based on performance relative to the average performance of people the same age
i. a very low intelligence score accompanied by one extraordinary skill
j. a program for the selective breeding of the most intelligent individuals
k. a statistical technique that identifies related items on a test

PROGRESS TEST 2

Progress Test 2 should be completed during a final chapter review. Answer the following questions after you thoroughly understand the correct answers for the section reviews and Progress Test 1.

Multiple-Choice Questions

1. The test created by Alfred Binet was designed specifically to
a. measure inborn intelligence in adults.
b. measure inborn intelligence in children.
c. predict school performance in children.
d. identify mentally retarded children so that they could be institutionalized.

2. Which of the following provides the strongest evidence of environment’s role in intelligence?
   a. Adopted children’s intelligence scores are more like their adoptive parents’ scores than their biological parents’.
   b. Children’s intelligence scores are more strongly related to their mothers’ scores than to their fathers’.
   c. Children moved from a deprived environment into an intellectually enriched one show gains in intellectual development.
   d. The intelligence scores of identical twins raised separately are no more alike than those of siblings.
3. If a test designed to indicate which applicants are likely to perform the best on the job fails to do so, the test has
   a. low reliability.
   b. low content validity.
   c. low predictive validity.
   d. not been standardized.

4. By creating a label such as "gifted," we begin to act as if all children are naturally divided into two categories, gifted and nongifted. This logical error is referred to as
   a. rationalization.
   b. nominalizing.
   c. factor analysis.
   d. reification.

5. The formula for the intelligence quotient was devised by
   a. Sternberg.
   b. Binet.
   c. Terman.
   d. Stern.

6. Current intelligence tests compute an individual's intelligence score as
   a. the ratio of mental age to chronological age multiplied by 100.
   b. the ratio of chronological age to mental age multiplied by 100.
   c. the amount by which the test-taker's performance deviates from the average performance of others the same age.
   d. the ratio of the test-taker's verbal intelligence score to his or her nonverbal intelligence score.

7. J. McVicker Hunt found that institutionalized children given "tutored human enrichment"
   a. showed no change in intelligence test performance compared with institutionalized children who did not receive such enrichment.
   b. responded so negatively as a result of their impoverished early experiences that he felt it necessary to disband the program.
   c. thrived intellectually and socially on the benefits of positive caregiving.
   d. actually developed greater intelligence than control subjects who had lived in foster homes since birth.

8. The concept of a g factor implies that intelligence
   a. is a single overall ability.
   b. is several specific abilities.
   c. cannot be defined or measured.
   d. is a reified concept.

9. Gerardeen has superb social skills, manages conflicts well, and has great empathy for her friends and co-workers. John Mayer, Peter Salovey, and David Caruso would probably say that Gerardeen possesses a high degree of
   a. g.
   b. social intelligence.
   c. practical intelligence.
   d. emotional intelligence.

10. By what age does a child's performance on an intelligence test stabilize?
    a. 2
    b. 3
    c. 6
    d. 7

11. The Flynn effect refers to the fact that
    a. White and Black infants score equally well on measures of infant intelligence.
    b. Asian students outperform North American students on math achievement tests.
    c. The IQ scores of today's better-fed and educated population exceed that of the 1930s population.
    d. Individual differences within a race are much greater than between-race differences.

12. In his study of children with high intelligence scores, Terman found that
    a. the children were more emotional and less healthy than a control group.
    b. the children were ostracized by classmates.
    c. the children were healthy and well-adjusted, and did well academically.
    d. later, as adults, they nearly all achieved great vocational success.

13. When highly skilled people are performing a task, their brains
    a. retrieve information from memory more quickly.
    b. register simple stimuli more quickly.
    c. demonstrate a more complex brain-wave response to stimuli.
    d. do all of these things.

14. Most experts view intelligence as a person's
    a. ability to perform well on intelligence tests.
    b. innate mental capacity.
    c. ability to learn from experience, solve problems, and adapt to new situations.
    d. diverse skills acquired throughout life.
15. Which of the following statements is true?
   a. About 1 percent of the population is mentally retarded.
   b. More males than females are mentally retarded.
   c. A majority of the mentally retarded can learn academic skills.
   d. All of these statements are true.

16. Prenatal hormones have an influence on
   a. verbal reasoning.
   b. spatial abilities.
   c. overall intelligence.
   d. all of these aspects of intelligence.

17. Which of the following is NOT cited as evidence of the reciprocal relationship between schooling and intelligence?
   a. Neither education level nor intelligence scores accurately predict income.
   b. Intelligence scores tend to rise during the school year.
   c. High school graduates have higher intelligence scores than do those who drop out early.
   d. High intelligence scores correlate with prolonged schooling.

18. Originally, IQ was defined as
   a. mental age divided by chronological age and multiplied by 100.
   b. chronological age divided by mental age and multiplied by 100.
   c. mental age subtracted from chronological age and multiplied by 100.
   d. chronological age subtracted from mental age and multiplied by 100.

19. Tests of ______ measure what an individual can do now, whereas tests of ______ predict what an individual will be able to do later.
   a. aptitude; achievement
   b. achievement; aptitude
   c. reliability; validity
   d. validity; reliability

20. Which of the following statements most accurately reflects the text's position regarding the relative contribution of genes and environment in determining intelligence?
   a. Except in cases of a neglectful early environment, each individual's basic intelligence is largely the product of heredity.

b. Except in those with genetic disorders such as Down syndrome, intelligence results primarily from environmental experiences.

b. Both genes and life experiences significantly influence performance on intelligence tests.

c. Because intelligence tests have such low predictive validity, the question cannot be addressed until psychologists agree on a more valid test of intelligence.

**True-False Items**

Indicate whether each statement is true or false by placing T or F in the blank next to the item.

1. In the current version of the Stanford-Binet intelligence test, one's performance is compared only with the performance of others the same age.  
   -  

2. Intelligence scores in the United States have been dropping over the past 50 years.  
   -  

3. Most of the major aptitude tests have higher validity than reliability.  
   -  

4. People with high intelligence scores tend to process sensory information more quickly.  
   -  

5. The gap in intelligence scores between black and white children is increasing.  
   -  

6. The intelligence scores of adopted children are more similar to those of their adoptive parents than their biological parents.  
   -  

7. The consensus among psychologists is that most intelligence tests are extremely biased.  
   -  

8. Most psychologists agree that intelligence is mainly determined by heredity.  
   -  

9. The Stanford-Binet test and the Wechsler scales are periodically restandardized.  
   -  

10. The variation in intelligence scores within a racial group is much larger than that between racial groups.  
    -  

11. Telling students they are unlikely to succeed often erodes their performance on aptitude tests.  
    -  

PSYCHOLOGY APPLIED

Answer these questions the day before an exam as a final check on your understanding of the chapter's terms and concepts.

Multiple-Choice Questions

1. Vanessa is a very creative sculptress. We would expect that Vanessa also
   a. has an exceptionally high intelligence score.
   b. is quite introverted.
   c. has a venturesome personality and is intrinsically motivated.
   d. lacks expertise in most other skills.
2. To say that the heritability of a trait is approximately 50 percent means
   a. that genes are responsible for 50 percent of the trait in an individual, and the environment is responsible for the rest.
   b. that the trait’s appearance in a person will reflect approximately equal genetic contributions from both parents.
   c. that of the variation in the trait within a group of people, 50 percent can be attributed to heredity.
   d. all of these things.
3. Twenty-two-year-old Dan has an intelligence score of 63 and the academic skills of a fourth-grader, and is unable to live independently. Dan probably
   a. has Down syndrome.
   b. has savant syndrome.
   c. is mentally retarded.
   d. will eventually achieve self-supporting social and vocational skills.
4. At age 16, Angel’s intelligence score was 110. What will her score probably be at age 32?
   a. 125
   b. 110
   c. 115
   d. There is no basis for predicting an individual’s future IQ.
5. A school psychologist found that 85 percent of those who scored above 115 on an aptitude test were “A” students and 75 percent of those who scored below 85 on the test were “D” students. The psychologist concluded that the test had high
   a. content validity because scores on it correlated highly with the criterion behavior.
   b. predictive validity because scores on it correlated highly with the criterion behavior.
   c. content validity because scores on it correlated highly with the target behavior.
   d. predictive validity because scores on it correlated highly with the target behavior.
6. Amelia recently took a test that assessed her ability to perform at the university level. The test she took was the
   a. WAIS.
   b. WISC.
   c. SAT.
   d. None of these tests, because they are all achievement tests.
7. Benito was born in 1937. In 1947, he scored 130 on an intelligence test. What was Benito’s mental age when he took the test?
   a. 9
   b. 10
   c. 11
   d. 13
8. Melvin has been diagnosed as having savant syndrome, which means that he
   a. has an IQ of 120 or higher.
   b. would score high on a test of analytical intelligence.
   c. is limited in mental ability but has one exceptional ability.
   d. was exposed to high levels of testosterone during prenatal development.
9. The contribution of environmental factors to racial gaps in intelligence scores is indicated by
   a. evidence that individual differences within a race are much greater than differences between races.
   b. evidence that white and black infants score equally well on certain measures of infant intelligence.
   c. the fact that Asian students outperform North American students on math achievement and aptitude tests.
   d. all of this evidence.
10. Hiroko’s math achievement score is considerably higher than that of most American students her age. Which of the following is true regarding this difference between Asian and North American students
    a. It is not a recent phenomenon.
    b. It may be due to the fact that Asian students have a longer school year.
    c. It holds only for girls.
    d. It holds only for boys.
11. Jack takes the same test of mechanical reasoning on several different days and gets virtually identical scores. This suggests that the test has
a. high content validity.
b. high reliability.
c. high predictive validity.
d. been standardized.

12. You would not use a test of hearing acuity as an intelligence test because it would lack
a. content reliability.
b. predictive reliability.
c. predictive validity.
d. content validity.

13. Before becoming attorneys, law students must pass a special licensing exam, which is an _______ test. Before entering college, high school students must take the SAT, which is an _______ test.
   a. achievement; aptitude
   b. aptitude; achievement
   c. achievement; achievement
   d. aptitude; aptitude

14. If you compare the same trait in people of similar heredity who live in very different environments, heritability for that trait will be _______; heritability for the trait is most likely to be _______ among people of very different heredities who live in similar environments.
   a. low; high
   b. high; low
   c. environmental; genetic
   d. genetic; environmental

15. A psychologist who is looking at a student’s intelligence score finds a jump of 30 points between the earliest score at age 2 and the most recent at age 17. The psychologist’s knowledge of testing would probably lead her to conclude that such a jump
a. indicates that different tests were used, creating an apparent change in intelligence level, although it actually remained stable.
b. signals a significant improvement in the child’s environment over this period.
c. is unsurprising, since intelligence scores do not become stable until late adolescence.
d. is mainly the result of the age at which the first test was taken.

16. If you wanted to develop a test of musical aptitude in North American children, which would be the appropriate standardization group?
   a. children all over the world
   b. North American children
   c. children of musical parents
   d. children with known musical ability

17. Don’s intelligence scores were only average, but he has been enormously successful as a corporate manager. Psychologists Sternberg and Wagner would probably suggest that
   a. Don’s verbal intelligence exceeds his performance intelligence.
   b. Don’s performance intelligence exceeds his verbal intelligence.
   c. Don’s academic intelligence exceeds his practical intelligence.
   d. Don’s practical intelligence exceeds his academic intelligence.

18. According to the text, what can be concluded from early intelligence testing in the United States?
   a. Most European immigrants were “feeble-minded.”
   b. Army recruits of other than West European heritage were intellectually deficient.
   c. The tests were biased against people who did not share the culture assumed by the test.
   d. None of these things could be concluded.

19. If asked to guess the intelligence score of a stranger, your best guess would be
   a. 75.
   b. 100.
   c. 125.
   d. “I don’t know, intelligence scores vary too widely.”

20. Which of the following is true of people who score high on aptitude tests?
   a. They achieve greater career success.
   b. They are likely to be happier.
   c. They always do well in school.
   d. None of these statements are true.
Essay Question

You have been asked to devise a Psychology Achievement Test (PAT) that will be administered to freshmen who declare psychology as their major. What steps will you take to ensure that the PAT is a good intelligence test? (Use the space below to list the points you want to make, and organize them. Then write the essay on a separate sheet of paper.)

3. general intelligence (g)
4. factor analysis
5. savant syndrome
6. creativity
7. emotional intelligence
8. mental age
9. Stanford-Binet
10. intelligence quotient (IQ)
11. achievement tests
12. aptitude tests
13. Wechsler Adult Intelligence Scale (WAIS)
14. standardization
15. normal curve (normal distribution)
16. reliability
17. validity
18. content validity
19. predictive validity
20. mental retardation
21. Down syndrome
22. stereotype threat

KEY TERMS

Writing Definitions

Using your own words, write on a separate piece of paper a brief definition or explanation of each of the following terms.

1. intelligence test
2. intelligence