One

INTRODUCTION AND OVERVIEW OF THE USES OF BRIEF INTELLIGENCE TESTS

This volume reviews the concept of brief intelligence testing and presents concise information on four brief intelligence tests that we consider the most salient to school and clinical practices. The volume as a whole follows the concise format of the Wiley Essentials series in so doing. This chapter provides an overview and definition of brief intelligence testing, as well as discussing its uses and limitations. Past efforts at developing short forms of tests and problems with such tests are noted as well. In subsequent chapters, we review information on the four brief intelligence tests we think most likely to meet the needs of a variety of clinicians and provide a chapter of sample evaluations that have used brief intelligence measures.

In choosing these tests, we used criteria that turned out to be highly similar to those of Kaufman and Lichtenberger (2006). Each of these four measures (in alphabetical order, as are the chapters devoted to them), the Kaufman Brief Intelligence Test, second edition (KBIT-2; Kaufman & Kaufman, 2004b), the Reynolds Intellectual Screening Test (RIST; Reynolds & Kamphaus, 2003a), the Wechsler Abbreviated Scale of Intelligence (WASI; Psychological Corporation, 1999), and the Wide Range Intelligence Test (WRIT; Glutting, Adams, & Sheslow, 2000, are relatively recent; have up-to-date, carefully selected norms; assess individuals across a wide age range; yield scores in verbal and nonverbal domains; produce scores with relatively good reliability evidence; present appropriate validity evidence for test score interpretation; and, for most examinees, require less than 30 minutes (this last requirement being questionably met for the WASI).

DON'T FORGET

Brief intelligence tests typically should not be used to diagnose a cognitive disorder.

WHAT IS A BRIEF INTELLIGENCE TEST?

Here we define a brief intelligence test as a rapidly administered test that provides information on global aspects of intelligence, but is relatively narrowly assessed. These tests do not provide sufficient breadth of coverage for application to clinical or educational diagnosis of cognitive disorders. *Brief* in our definition refers to both coverage and administration time. We did not, for example, include the Reynolds Intellectual Assessment Scales (RIAS; Reynolds & Kamphaus, 2003b) here, due to its breadth of coverage. Although typically administered to most examinees over 25 to 35 minutes, the subtests involve broad, complex mental processes, the reliabilities of the obtained scores are routinely above .90 (even at the subtest level), and it has a conormed memory scale (verbal and nonverbal) that can be added to the calculation of the various intellectual composite scores provided. Hence, it is as useful (and more so, in some cases) as much longer intelligence tests that purport to be more comprehensive (see especially Chapters 1 and 6 of Reynolds & Kamphaus, 2003b).

WHAT ARE REASONABLE APPLICATIONS OF BRIEF INTELLIGENCE TESTS?

The question of why one would prefer a brief intelligence test over a more comprehensive measure is certainly salient and cogent. If it is important to measure intelligence, is it not important to measure it well?

Many brief intelligence tests do measure intelligence well, despite our admonition that they should not be used in diagnosis of cognitive disorders, if they meet our criteria noted in Rapid Reference 1.1. There are many times when knowledge of general levels of intellectual functioning (*g*) and levels of intellectual skills in the verbal and nonverbal domains are useful

Rapid Reference 1.1

Characteristics of the Most Useful Brief Intelligence Tests

- Recent, up-to-date, population-proportionate standardization samples
- Allow assessment of a wide age range
- Provide scores with relatively good reliability (i.e., major scores with alpha coefficients above .80)
- Provide evidence to support the validity of test score interpretation
- Provide for at least measurement of general intelligence, or *g, and* verbal and nonverbal intellectual domains
- Should require less than 30 minutes of administration time for most examinees

but diagnosis of a cognitive disorder is not at issue. In the context of an evaluation of behavioral and emotional problems, for example, a comprehensive intellectual assessment will not always be useful. Rather, general knowledge of the individual's overall level of intelligence is sufficient to determine whether or not the behavioral or emotional problems are associated with lower levels of cognitive development. In the context of therapy, an estimate of global intelligence is useful because individuals at different overall levels of intelligence may benefit differentially from certain interventions. Brief IQ tests will not only be appropriate but also useful in any circumstances where a global estimate of general intelligence, or *g,* is all that is desired by the clinician. In the following we present and discuss what we view as the remaining principal applications of brief intelligence tests.

Screening for More Comprehensive Evaluations

There are numerous times when it is desirable to locate as many people as possible who have a specified set of characteristics. To assess everyone

in a population with a comprehensive measure quickly can become overwhelming and impractical, both financially and logically. Screening methods are often employed to sift through large groups and to determine, on a probability basis, who is most likely to have these characteristics. The use of objective test data in such decisions greatly reduces a host of referral biases (e.g., see Kamphaus & Frick, 2002). When a specified level of intelligence is one such characteristic, brief intelligence tests are useful in such a screening process.

Additionally, practitioners might use a brief intelligence measure in a public health clinic, pediatric practice, preschool or prekindergarten screening program (Reynolds, 1979), managed care organization, veterans hospital, or other setting to assess risk for functional intellectual impairment. The following are some specific examples of such situations as suggested by Reynolds and Kamphaus (2003b, p. 117) with a few additions of our own:

- A managed care organization uses a screener at intake for all mental health and elderly patients in order to rule out intellectual impairment.
- A child referred for ADHD is screened for intellectual problems because learning disability (LD) is known to be a relatively frequent comorbidity.
- A school district conducts a screening of all entering kindergarteners to rule out significant developmental delays.
- Prior to implementing Response to Intervention (RTI) methods in special education referrals, all referred children are administered a brief intelligence test to rule in or out the need for a comprehensive assessment for Mental Retardation.
- A psychologist screens all stroke/CVA patients prior to discharge from hospital-based rehabilitation to ensure that significant intellectual impairment is not present.
- A treatment center for patients with HIV screens advanced cases in order to determine whether intellectual impairment has occurred due to the advanced stage of the disease.

- A hospital screens all patients over age 75 years who are scheduled for surgery with a general anesthetic or other highly invasive procedure to determine cognitive level for understanding issues of consent and to establish an intellectual baseline.
- A hospital screens all major organ transplant patients pre- and postsurgery to evaluate potential cognitive impairments that may lead to comprehensive neuropsychological evaluations.
- A pediatric psychologist screens children subsequent to treatment with prophylactic chemotherapy for acute lymphocytic anemia to rule out cognitive sequelae.
- A program for intellectually gifted and talented children uses individual intelligence testing to screen applicants for possible admission into the program.

One might legitimately pose the question, why not just employ a group intelligence test in large-scale screening as opposed to a brief, individually administered intelligence test? There are actually many good reasons. Most group-administered intelligence tests, even very popular ones such as the Wonderlic Personnel Test (Wonderlic, 1999) and the Shipley Institute of Living Scale (Zachary, 1986) invoke reading as a principal medium of testing for intelligence. This creates a level of confounding between reading skill and measured IQ that is unacceptable in many circumstances. There are numerous examples in the media of exceptionally bright individuals who experience significant reading problems (of which even Albert Einstein has been purported to have suffered to some extent). Psychologists and other clinicians encounter this phenomenon frequently. A severe discrepancy between reading skill and measured IQ was the hallmark indicator of the presence of a learning disability for over 50 years and was even written into many state and federal laws (e.g., Reynolds, 1985).

There are certainly group-administered intelligence tests that are nonverbal—that do not rely on reading at all (e.g., the Beta III; Kellogg & Morton, 1999). However, such tests are frequently too narrow, ignoring the entire domain of verbal reasoning and other aspects of problem-solving in

DON'T FORGET

Group-administered tests have severe limitations in the screening of intellectual function.

DON'T FORGET

When screening for intellectual levels, evaluation of both verbal and nonverbal domains is necessary for most (not all) purposes.

DON'T FORGET

Verbal intelligence is nearly always found to be a superior predictor (versus nonverbal intelligence) of academic outcomes.

language-related domains. Nonverbal group measures of intelligence are useful principally when assessing individuals who have limited English proficiency, and are also helpful even with fluent speakers when English is a second language. However, even then, the purpose of the screening will dictate the applicability of nonverbal measures. Verbal intelligence is found routinely to be a better predictor of any form of academic success (when compared to nonverbal intelligence) whether school achievement, vocational training programs, or related work (e.g., see Kamphaus, 2001; Kaufman & Lichtenberger, 2006; and Sattler, 2001, for reviews).

There are several special purposes for which brief intelligence tests are particularly useful. These will be discussed in the following, but remember that many other circumstances exist (as noted previously). In a variety of these areas, group-administered tests are used; however, the use of brief, individually administered tests would in fact prove more accurate and hence more efficacious. Before discussing these areas, it is useful to discuss the issue of errors in screening.

Errors in Screening with Brief IQ Tests

All procedures used for assessment, diagnosis, classification, and the like are, inevitably, sometimes wrong. The frequency and type of errors that are most likely to occur vary depending upon the setting of cutoff scores or the interpretation given to the outcome. When using brief IQ tests as

screening measures (i.e., to reduce the total number of persons who need to undertake a more comprehensive examination or evaluation), there are two types of errors that can occur. One is a false positive error and the other is a false negative error. A classification matrix indicating these error types is given in Figure 1.1.

In this matrix, the hit rates or sensitivity and specificity of the screening procedure (here a brief IQ test) are evaluated against the outcome when using a comprehensive assessment as the ultimate criterion. *Sensitivity* is defined as the ability to detect the presence of something (here, most likely Mental Retardation, qualification for a program for the intellectually gifted, a job training program, etc.) when it is actually present. *Specificity* refers to the ability to detect the absence of something when it is in fact not

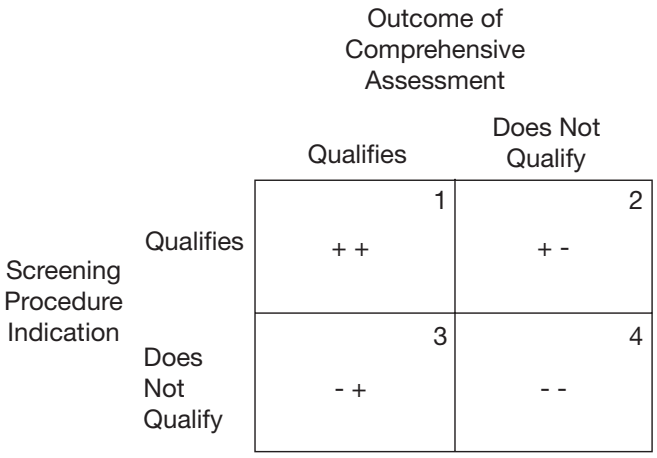

Figure 1.1 Illustration of classification outcomes for screening procedures with a comprehensive assessment as the criterion measure

present. The sensitivity and specificity rates of any procedure are affected by cutoff scores, which affect false positive and false negative error rates. Typically, when we attempt to increase the sensitivity of our screening procedure, we increase the false positive error rate (we identify too many people who do not ultimately qualify) but our false negative rate decreases. When we attempt to increase the specificity of our procedure, the opposite effect is noted: The false negative rate increases (we eliminate too many people who would in fact qualify if given the comprehensive assessment), while the false positive rate decreases. However, changes in sensitivity and specificity are not directly or proportionately linked to one another—that is, if we increase sensitivity by 10 percent we may or may not decrease specificity by the same amount (10 percent). This inequality occurs because of the base rates of qualifiers—the mathematical explanation is beyond the scope of our work here. Suffice it to say that any time cutoff scores are set or changed, sensitivity, specificity, and our error matrix should be recalculated. (See Rapid Reference 1.2.)

Is it better to make more, less, or equivalent proportions of false positive or false negative errors? There is seldom a hard factual answer to this question in our field. The answer is always contextual and ultimately a policy decision. In some cases, the answer is clear. Suppose we were screening people for a correctable heart defect that if undetected was nearly always fatal. Here it is clear that we would tolerate a high false positive rate due to the dire consequences associated with false negative errors. However, suppose we are screening for admission to a school district's program for the intellectually gifted. We still want to have a small false negative error rate, but, given the cost of comprehensive evaluations, we might well tolerate a higher false negative error rate than in the case of our heart defect example. In choosing to use screening procedures, it is always a good idea to consider not just error rates, but the type of er-

Rapid Reference 1.2

Sensitivity = the ability to detect something when it is present.

Specificity = the ability to detect the absence of something when it is absent.

ror that is most likely to occur and the consequences of each type of error.

DON'T FORGET

When using screening procedures, do not consider just the overall error rate. Also consider the type of errors likely to be made: false positive and false negative.

Another way to view such errors is to calculate the positive and the negative predictive power of a brief test at different cutoff points. This is a way of restating error rates as probabilities. Positive predictive power is the probability that a person scoring at our above a particular cutoff point will qualify on the comprehensive evaluation. Negative predictive power is the probability that a person scoring below a particular cutoff point will not qualify on the comprehensive evaluation.

Remember in all cases that even comprehensive examinations and the lengthiest of tests also will misclassify a number of individuals. However, when choosing to use a screening measure, it is best to validate it and compute error rates against what will be the final criterion for qualification.

Screening for Programs for the Intellectually Gifted

Schools often seek to identify and provide a variety of programmatic enrichments, specialized instruction, and academic advancement to students with high to very high IQ levels. Multiple methods are used to discover these students including teacher and parent nomination, group-administered tests of intelligence and achievement, and nomination by other school staff. These approaches, all totaled, can generate an overwhelming number of referrals while even missing students, especially those with behavior problems, limited English proficiency, or even reading disabilities—some of whom will undoubtedly have very high levels of intelligence. Various biases will also exist in subjective referrals. School districts vary in

DON'T FORGET

All forms of psychological tests and measurements have associated error rates, not just brief tests or short forms.

setting cutoffs for participation in such programs, but IQs of 125 to 130 are common standards.

Many school districts (including several among the 10 largest in the United States) have opted to use brief intelligence tests, most commonly among the four detailed in this book (the KBIT-2 and the RIST being especially popular in this context), for this purpose. When used in this manner, cut scores that dictate a more comprehensive examination are quite different from the scores ultimately required to gain entrance into the program. As noted previously, when screening, one must consider the types of error that are most acceptable: false positive or false negative errors. In the case of screening for a program for the intellectually gifted, false positive errors are more desirable, since we do not want to deny inappropriately any student's participation in the program. A cut score that triggers continued referral and more comprehensive evaluation will then be set lower. For example, if the RIAS is used as the criterion measure of intelligence and the cutoff for admission to the program is a RIAS Composite IQ (CIX) of 125 and the RIST (which takes only 8 to 12 minutes per student to administer) is used as a preliminary screening measure, a RIST IQ cutoff of 118 or higher might be set for the screening instrument. This value is chosen based on actual data indicating that very few children who earn RIST IQs of 117 or less will earn a RIAS CIX of 125 or higher. It will still identify more students than will ultimately qualify (the false positive error rate), but it will disqualify very few students who would ultimately meet the criteria based on the more comprehensive testing (the false negative rate). Given the costs in time and in money, screening with brief IQ measures makes great sense in such circumstances.

Screening for Programs for Cognitive Impairments

Public schools are charged under federal laws with identifying and serving all students with a disability. Cognitive impairments nearly always cause problems of an academic nature. Various processing disorders, traumatic brain injuries, illnesses of various sorts (and sometimes their treatments), as well as such well-known conditions as Mental Retardation and a host of

genetic conditions (e.g., see Fletcher-Janzen & Reynolds, 2003; Goldstein & Reynolds, 1999) can result in cognitive impairments. It is quite expensive to administer individual tests to large numbers of students, so once again brief IQ tests come to mind, and are used to screen for a variety of cognitive problems. Some large school districts actually administer a brief IQ test (most of which we are aware use either the KBIT-2 or the RIST) to every incoming student, whether new to school or a transfer student.

Screening for Vocational Programming or Employment Selection

Screening for vocational programming or employment selection both represent additional circumstances in which large numbers of individuals may need to be evaluated and when the use of group tests is questionable. Most brief IQ tests, and particularly the four we have chosen here, have relatively high correlations with academic outcomes, which means that they will do well in predicting who will be successful in completing vocational training programs with various levels of academic demands.

Additionally, many employers have established IQ-cutoff levels for certain positions within their companies or agencies (all in accordance with the regulations of the Equal Employment Opportunity Commission and the U.S. Office of Civil Rights). Police and other public safety agencies often set such cutoffs for intellectual levels, for example, as do many corporations when hiring at upper-level management and executive levels. Even brokerage and financial asset management companies often use IQ measures as one component of the hiring decision. In such circumstances, brief IQ measures are an efficient means of evaluation of intellectual function.

Other Applications of Brief IQ Tests

While we are certain that there are additional applications we have not seen, there are also additional uses of brief IQ tests we have employed in our own practices and that have been suggested by other authors (e.g., Kaufman & Lichtenberger, 2006).

Referrals Associated Primarily with Affective or Behavioral Disturbances

In 27 years of clinical practice, one of us (CRR) always found it useful to assess intellectual level as a necessary component of understanding emotional and behavioral problems. Kaufman and Lichtenberger (2006) also suggest that an IQ estimate is useful in psychiatric referrals. Psychiatrists routinely include an estimate of global intelligence as a component of the mental status examination of patients of all ages (although psychiatrists and other medical personnel are most likely to base this estimate on language usage, especially vocabulary, and little else; e.g., Sadock & Sadock, 2000).

The constraints of time available to psychologists working in public agencies, such as schools, the continually increasing demands on mental health services, as well as the time and financial constraints placed on assessment practices by the managed care community, often make a comprehensive intellectual assessment impractical or prohibitive in many such cases. A comprehensive assessment of intellectual functioning may well be unnecessary as well; however, a reliable and valid estimate of global intelligence and perhaps verbal and nonverbal intellectual skills can be immensely helpful. This is when brief IQ tests can be employed profitably.

Levels of intellectual development are important to understand when considering behavioral and emotional data, and in the interpretation of personality and behavioral test data. Several examples come to mind quickly. When interpreting various projective tests, for example, developmental level is crucial. Transparencies in human figure drawings are quite common by individuals prior to age 6 years. Beginning around age 6 years, such signs are pathognomic. However, this is related to cognitive development. Transparencies in a human figure drawing by a 7-year-old with an IQ of 125 would (or should) be inter-

DON'T FORGET

Knowledge of general levels of intellectual functioning can improve your understanding and interpretation of emotional and behavioral problems.

preted quite differently than the same drawings produced by a 7-year-old with an IQ of 75.

The same may be true of behavioral data. It might very well be appropriate to interpret behavior-rating scale data on an instrument like the BASC-2 (Reynolds & Kamphaus, 2004) quite differently for children of the same age but with quite disparate levels of cognitive development. This would seem to be especially true of scales assessing such characteristics as attention and hyperactivity, when the culprit simply may be a low level of cognitive development overall and not something like Attention-Deficit/Hyperactivity Disorder (although the incidence of ADHD is higher among individuals with Mental Retardation than in the general population). Knowledge of cognitive development is important to understanding and interpreting adaptive behavior scales, as well. Individuals' levels of understanding of the complexities of their psychosocial and entire ecosystems will be important in evaluating affective and behavioral issues at all ages. Intellectual skills are important in providing a frame of reference for such interpretations.

Making Treatment Recommendations in Emotional and Behavioral Referrals

Level of intellectual development globally and in the verbal and nonverbal domains can influence response to certain interventions. For example, individuals with average and higher intellectual levels are more likely to benefit from individual psychotherapy approaches, certain forms of group therapy, and bibliotherapy than are other individuals. Persons with below-average levels of intelligence are less likely to benefit from insight-oriented treatment approaches and behavioral interventions are more likely to be successful. Detailed knowledge of cognitive development often is not necessary in such circumstances, but valid, reliable knowledge of general levels of intellectual development is certainly useful.

Research When IQ is Needed as a Covariate or Related Variable

In research projects in which intellectual level is needed to demonstrate group characteristics, for matching samples, or as a covariate in nonran-

dom samples, brief IQ tests are an efficacious alternative to comprehensive examinations (when IQ itself is not the focus of the research; in that case, a comprehensive measure is more likely to produce useful results). Brief IQ tests are nearly always superior to group IQ measures for reasons given earlier. King and King (1982) argued that research applications were in fact the most valuable applications of brief IQ tests. Kaufman and Lichtenberger (2006) disagree with this view—we do as well—and see brief IQ tests as important in all the domains noted previously. If forced to choose, perhaps it would be most efficient to use brief IQ tests in the assessment of referrals for emotional, behavioral, and related psychiatric problems.

WHY NOT USE SHORT FORMS OF COMPREHENSIVE TESTS?

In the past, clinicians used short comprehensive forms of intelligence measures, such as the Wechsler intelligence scales, to assist in obtaining a brief estimate of intelligence. While using a shortened version of a Wechsler intelligence scale served as an acceptable means of estimating intelligence for decades, and the development of short forms of the Wechsler Scales became a cottage research industry of its own (Kaufman, 1990; Kaufman, Ishikuma, & Kaufman-Packer, 1991; Prifitera, Weiss, & Saklofske, 1998; Reynolds, Willson, & Clark, 1983; Silverstein, 1982), short forms exhibit some limitations that should be of concern for clinicians. First, clinicians have used too many alternative ways of shortening the Wechsler batteries. One common method of shortening a Wechsler battery is to use only a few items from each subtest (Satz & Mogel, 1962). Others have selected a few subtests based on psychometric properties, coverage of cognitive functioning, or testing time (Doppelt, 1956; Kaufman et al., 1991; McNemar, 1950; Reynolds et al., 1983; Silverstein, 1982). Regardless of how a clinician goes about shortening an intelligence measure, unnecessary time is spent attempting to develop what one hopes may be an adequate short form. Typically, short forms have altered the order of subtest administra-

tion or the item sequence. On measures like the Wechsler scales, on which autocorrelations exist across subtests by order of administration, this is problematic as research has indicated that individuals may perform differently on such short forms than on a full Wechsler instrument (Saklofske & Schwean-Kowalchuk, 1992; Sattler, 1988; Thompson, 1987). Subtest administration order, motivation, and fatigue may produce differential scores on short forms of comprehensive intelligence scales.

Smith, McCarthy, and Anderson (2000) reviewed in detail what they considered the seven sins of short-form development (i.e., reasons why reliability and validity are commonly overestimated). Kaufman and Lichtenberger (2006) also reviewed numerous problems with derivative short forms taken by abridgement of comprehensive scales. We are in essential concurrence that, when these problems with short forms exist, they should not be used.

Of the four brief IQ tests that are the subject of this work, only the RIST (Reynolds & Kamphaus, 2003a) is a derivative. It is included here because it does not have the problems of other derivative short forms as designated by Smith et al. (2000) and by Kaufman and Lichtenberger (2006), and due to its very brief administration time (8 to 12 minutes), strong reliability, and extensive validity data. The RIST is composed of the first two subtests of the RIAS (nullifying the issues of order effects and fatigue) and the item sequence is common as well. Extensive reliability and validity data are reported, it includes a verbal and nonverbal task, and, in general, meets all the criteria for a brief IQ test in Rapid Reference 1.1.

SUMMARY

While brief intelligence tests should not be used for diagnosis of cognitive disorders, they are helpful in many circumstances in which a comprehensive intellectual assessment is unnecessary or impractical. Most often, this will be in various screening applications, but includes other uses, such as the assessment of individuals with emotional and behavioral disorders. Group tests that rely upon reading skills or ignore the verbal domain will

be confounded as screening measures of overall intelligence, and are quite often too narrow to function without unacceptable rates of errors. Brief intelligence tests can provide objective, efficacious data that are consistently superior to subjective selection or referral methods.

TEST YOURSELF

1. Which of the following are characteristics of the most useful brief IQ tests? (Mark all that apply.) They

(a) are very inexpensive to purchase.
(b) have recent and up-to-date normative samples.
(c) are flexible (e.g., they allow examiners to choose items to match examinees).
(d) are typically administered in 30 minutes or less.
(e) are no more than two subtests in length.
(f) are reliable measures of *g* and of verbal and nonverbal intelligence.
(g) are presented with evidence of reliability and validity.
(h) are useful for diagnosis of the most common cognitive disorders.
(i) typically overestimate IQ levels so that no examinee is penalized for having taken a brief IQ test.
(j) are most useful in research applications and not in a clinical setting.

2. Sensitivity in assessment refers to

(a) the ability of the examiner to relate to the examinee.
(b) the practice effects seen on retesting.
(c) the ability of a test to detect the presence of something.
(d) the ability of a test to detect the absence of something.

3. Specificity in assessment refers to

(a) the ability of the examiner to relate to the examinee.
(b) the practice effects seen on retesting.
(c) the ability of a test to detect the presence of something.
(d) the ability of a test to detect the absence of something.

4. Which of the following is nearly always the best predictor of academic achievement?

(a) overall intelligence or *g*
(b) nonverbal intelligence
(c) verbal intelligence
(d) mother's educational level

5. Reading skill of the examinee is often a confounding factor in the use of

(a) group-administered intelligence tests.
(b) comprehensive, individually administered intelligence tests.
(c) brief, individually administered intelligence tests.
(d) group-administered reading tests.

6. False positive errors

(a) are the most common error made by brief IQ tests.
(b) are the least common error made by brief IQ tests.
(c) are the most serious type of error in all assessment conditions.
(d) none of the above.

7. False negative errors

(a) are the most common error made by brief IQ tests.
(b) are the least common error made by brief IQ tests.
(c) are the most serious type of error in all assessment conditions.
(d) none of the above.

8. In setting cutoff scores for screening measures, the most important factor to consider is

(a) the overall error rate.
(b) false positive errors.
(c) false negative errors.
(d) the balance between false positive and false negative error rates in the context of the screening application.

(*continued*)

9. When screening for intellectual level

(a) *g* is the only important concern.

(b) verbal and nonverbal intelligence should be considered.

(c) memory assessments should nearly always be considered.

(d) working memory and processing speed are the best estimators in most cases.

10. Brief IQ tests are useful in which of the following: (Mark all that apply.)

(a) Estimating IQ of psychiatric referrals.

(b) Screening for programs for the intellectually gifted.

(c) Screening for top-level management positions.

(d) Diagnosing Mental Retardation.

(e) Diagnosing various neurodevelopmental and genetic conditions.

(f) Research on intelligence.

(g) Research when intelligence is a crucial covariate.

Answers: 1. b, d, f, g; 2. c; 3. d; 4. c; 5. a; 6. d; 7. d; 8. d; 9. b; 10. a, b, c, g