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TEACHING TIPS AND MORE

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Teaching Tips—Mathematics

The GED Mathematics Test comprises 50 questions and is divided into two sections of 25 questions each. In Part 1, calculator use is allowed, and in Part 2, calculator use is not allowed. About 40 of the total 50 questions on the Mathematics Test are multiple choice; the remaining 10 are in an alternate format. Alternate-format questions require the test-taker to record answers on either standard or coordinate plane grids. Both Parts 1 and 2 of the test include multiple-choice, standard grid, and coordinate plane grid questions.

Below are some general tips that GED instructors should provide to their students as they prepare for the Mathematics Test.

- At the test center, all test-takers will be provided with a *Casio fx-260* calculator to use on Part 1 of the Mathematics Test. Make sure that your students are familiar in advance with the basic operations of this or a similar scientific calculator. Basic directions for using the calculator are provided in the *GED Information Bulletin* and on the actual test.
- Remind your students that, during the actual test administration, they must return their calculators to the GED Examiner before they will be given Part 2 of the Mathematics Test.
- The coordinate plane grid requires the test-taker to fill in only one circle to indicate a response. Emphasize to your students that, if they fill in more than one circle on the graph, their answers will automatically be scored as incorrect. See page 14 of the *GED Information Bulletin* to view a sample coordinate plane grid. This page also appears in the actual test booklets.
- See page 14 of the *GED Information Bulletin* to view a sample standard grid. Make sure that your students practice the acceptable ways of writing responses with decimal numbers and fractions on the grid and filling in the corresponding circles. Remind students that, for standard grid questions, answers can never be a negative number because the grid does not accommodate negative numbers.
- The test booklets for Parts 1 and 2 include a list of mathematical formulas to which students may refer at any time while they are taking the Mathematics Test. However, for their own convenience and efficiency during testing, make sure that your students know in advance what formulas appear on this list. In addition, ask your students to practice using these formulas before the actual test. See page 14 of the *GED Information Bulletin* to view the formulas page.

Remind students that some questions will provide more information than is actually needed to answer them. Help your students determine which information is relevant to particular question types.

Help your students to carefully read the questions to make sure that they know exactly what information is required. Sometimes, students may need to perform a series of steps in order to obtain the information that the question demands; their first calculation may not be at all what the question asks.

Help your students to use their personal experience to solve the problems. The settings used for the problems in the Mathematics Test are usually realistic. For example, in a test question that requires a student to compute weekly earnings, remind your students to ask themselves, "How would I calculate my weekly earnings?"

Remind your students that they should not assume that lines in diagrams are parallel or perpendicular unless that information is given in the question--either in words or symbols. This rule is true even when the lines look parallel or perpendicular.

Although diagrams on the Mathematics Test are as realistic as possible, students should not assume that they are drawn to scale unless the question explicitly makes such a statement.

FOCUS: SOLVING FOR VARIABLES

For some candidates, the presence of variables in a question can cause significant concern. A test-taker with algebra skills will be able to answer some questions more quickly than someone who do not have or recall these concepts. However, there are other ways to determine the correct solution for a multiple-choice question as demonstrated with the sample questions below.

Example 1:

The dimensions of the rectangle shown below are $2x$ and $3x$.

How many square units are in its area?

- (1) 12
- (2) $5x$
- (3) $10x$
- (4) $5x^2$
- (5) $6x^2$

Candidates should be familiar with the process of determining the area of a rectangle when the length and width are known. If they have forgotten the formula, it can be found on the Formulas page at the beginning of the *Mathematics Test* booklet. In any case, candidates should recognize that the length and width shown should be multiplied. However, some may have forgotten how to do so when variables are involved.

The key to answering the question without remembering the algebraic process for multiplying variables is to know that the correct response must be true for **any value of x** . Knowing that is true, the following process will lead to the correct solution.

1. Select a value for x .
2. Evaluate the dimensions of the rectangle using that value.
3. Calculate the area as a number.

4. Determine which of the alternatives yields that value for the area when the **same** value is substituted for x .

Caution: When any number can be chosen, avoid selecting 0 or 1. Each of these numbers can lead to a solution that appears to be correct but may not be.

Here is how the process would work in this case.

1. Select a value other than 0 or 1 for x : let $x = 5$.
2. Evaluate the dimensions of the rectangle: $2x = 2 \times 5 = 10$; $3x = 3 \times 5 = 15$.
3. Calculate the area: $10 \times 15 = 150$.
4. Determine which alternative would yield the same area when 5 is substituted for x :
 - 12 does not change since there is no variable in the expression, and 12 is not the same as 150, the area found in step 3 above.
 - $5x = 5 \times (5) = 25$; this is not the same as 150.
 - $10x = 10 \times (5) = 50$; this is not the same as 150.
 - $5x^2 = 5 \times (5)^2 = 5 \times 25 = 125$; this is not the same as 150.
 - $6x^2 = 6 \times (5)^2 = 6 \times 25 = 150$; this is the same area as found before, so this is the correct response.

Urge your students to consider checking their work by selecting another value for x and observing that the area found using the formula and that found by evaluating the correct alternative (#5) are the same.

1. Select 10 for x .
2. $2x = 2 \times 10 = 20$; $3x = 3 \times 10 = 30$
3. Area = $20 \times 30 = 600$
4. $6x^2 = 6 \times (10)^2 = 6 \times 100 = 600$; this is the same area found in step 3.

This will be true for any number that is selected. If a candidate picked 12.65 for x , the answers would be the same. However, the arithmetic would be time-consuming without a calculator. The process is easier if your students select simpler numbers, but remind the candidates to avoid picking 0 or 1.

Example 2:

If $18.5 \times (10 - n) / n = 18.5$, what is the value of n ?

- (A) 1
- (B) 2
- (C) 5
- (D) 6
- (E) 10

Again, knowing algebra and number sense would make it easier for a candidate to find the correct solution. However, because this is a multiple-choice question,

the correct response is already among the choices and can be found by substituting the given values for n and observing what happens.

The two sides of the equation must equal the same number. Since the right-hand side never changes because no variables are present, the left-hand side must be the same number: 18.5. For which of the given alternatives will $18.5 \times (10 - n) / n$ equal 18.5?

- (A) 1: $18.5 \times (10 - n) / n = 18.5 \times (10 - 1) / 1 = 18.5 \times (9) / 1 = 18.5 \times 9$; without multiplying, candidates should see that this will not equal 18.5
- (B) 2: $18.5 \times (10 - n) / n = 18.5 \times (10 - 2) / 2 = 18.5 \times (8) / 2 = 18.5 \times 4$; without multiplying, candidates should see that this will not equal 18.5
- (C) 5: $18.5 \times (10 - n) / n = 18.5 \times (10 - 5) / 5 = 18.5 \times (5) / 5 = 18.5 \times 1$; candidates should recognize that this equals 18.5

Having found the correct value, there is no need to try the remaining alternatives.

Notice that, in each substitution, both n 's were replaced by the same number. When substituting a number for a variable, the candidate must use the same number every time the variable appears.

As mentioned about this problem earlier, having number sense would make it easier to find the correct solution. On the left-hand side of the equation, 18.5 is multiplied by an expression containing variables. The result equals the same number because the right-hand side of the equation is 18.5. This can only happen if 18.5 is multiplied by 1. Therefore, the expression $(10 - n) / n$ must equal 1. Knowing that this is true would make the substitution easier.

- (A) Does $(10 - 1) / 1 = 1$? No, $(10 - 1) / 1 = (9) / 1 = 9$
- (B) Does $(10 - 2) / 2 = 1$? No, $(10 - 2) / 2 = (8) / 2 = 4$
- (C) Does $(10 - 5) / 5 = 1$? Yes, $(5) / 5 = 1$

The process of substituting values for variables is not the most time-efficient way to find the correct answer. However, it is an approach that should be considered if the candidate cannot recall necessary algebra skills. Candidates should consider working on these problems last so that they will have enough time to also work on other questions.

Teaching Tips—Language Arts, Reading

The GED Language Arts, Reading Test comprises seven reading selections--five fiction and two nonfiction--and forty multiple-choice questions about those selections (between four and eight questions per selection). The questions assess the candidate's cognitive skills of comprehension, application, analysis, and synthesis. Each reading selection is preceded by a bolded "purpose question" that provides a focus for the candidate as s/he starts reading.

Below are some general tips that GED instructors should provide to their students as they prepare for the Language Arts, Reading Test.

Remind your students to look at the bolded purpose question before reading the selection. This question (which does not need to be answered) will help candidates identify a purpose and focus for their reading.

Suggest to your students that they find a reading test-taking strategy that works best for them. Some test-takers benefit from looking at the test questions before reading the actual selection; others prefer to read the selection first.

Recommend that your students read the entire selection before answering any of the questions because most of the questions assume an overall understanding of the text.

Encourage your students to use the context of the surrounding words and sentences to approximate the meaning of unfamiliar words.

Remind your students that all text in a reading selection should be read, including explanatory notes--set off in square brackets--and stage directions in plays, which are set off in italics. These sections are important because they include significant information about the setting and characters' actions and emotions.

Urge your students to use the line references when they appear in questions to re-read the lines in their full context. Discourage students from relying solely on memory when working on these questions.

Remind your students to read the questions carefully to determine what exactly is being asked. An answer choice may be a true statement, but it may not answer the particular question that is asked.

How are GED scores reported?

GED Testing Service does not endorse conversion of the GED test scores to grade point averages (GPA); however, the brochure "College Admissions and Candidates with GED High School Credential" (PDF; 115KB) provides information on estimating national class rank from GED test scores.

GED Tests scores provide an estimate of a test-taker's academic knowledge and skills in each content area as compared to that of recent high school graduates. As with any test, the scores are not intended to be a complete measure of all a test-taker can do.

For the 2002 Series GED Tests, performance on each of the five tests is reported in two ways: as "a standard score," ranging from 200 to 800, and "a percentile rank," ranging from 1 to 99.

A **standard score** is used to compare a test-taker's performance on a test to the performance of graduating high school seniors who took the test. The average standard score for a sample of U.S. graduating high school seniors is 500 for each test in the battery. About half of these seniors earned standard scores above 500 and about half earned standard scores below 500 on each test. Approximately 68 percent of all graduating high school seniors earn scores between 400 and 600 on the GED standard score scale. Only 2 percent of graduating high school seniors earn scores lower than 300 or higher than 700.

The **percentile rank** indicates the percentage of graduating high school seniors who earned scores at or below a test-taker's test score. For example, if a test-taker earned a score of 510 on the Science Test with a percentile rank of 54, those numbers indicate that 54 percent of graduating high school seniors earned a score of 510 or lower.

Each item is worth one point if answered correctly and zero points if answered incorrectly; however, the number of items answered correctly is not reported.

The Language Arts, Writing Test standard score is a weighted combination of scores from Part I (multiple-choice items) and the essay in Part II.

What scores are needed to pass the GED test battery?

To pass the five-test battery, the GED test-taker must demonstrate a level of knowledge and skill that meets or surpasses that of approximately 60 percent of graduating high school seniors.

For the 2002 Series GED Tests, the minimum passing standard set by the GED Testing Service® is an average standard score of 450 or greater across the five content area tests (a total standard score of 2250 or greater) and, in addition, a standard score of 410 or greater on each content area test. Most jurisdictions (state, province, or territory) use this passing standard requirement; however, they may set their passing standard requirement higher than, but not lower than, a total standard score of 2250 or greater and a standard score of 410 or greater on each test. Although the requirements may vary slightly from one jurisdiction to the next, passing standard requirements are typically reported as a minimum total or average standard score across all five tests and a minimum standard score for each test.

This passing standard requirement allows test-takers to "compensate" for performance in one content area by stronger performance in another; i.e., a lower score on one test can be compensated by a higher score on another test and result in passing the GED test battery. Many skills make important contributions to achievement, and it is possible for most test-takers to compensate for weaknesses in one area using strengths in other areas.

Local Official GED Testing Centers can tell test-takers what requirements must be met in order to earn a GED credential. [Locate the nearest Official GED Testing Center by zip code.](#)

Retesting

If someone takes the GED Tests and doesn't meet the minimum passing standard needed to earn a GED credential in their jurisdiction, the test-taker should contact the local adult education resource center or look into preparation classes or materials to help brush up on the skills.

College admissions and the GED credential

If a test-taker is taking the GED Tests for college or university admission, they should check first with the institution to find out the minimum scores required as well as other criteria that might be needed for admission.

In addition, the 2002 brochure "[College Admissions and Candidates with GED High School Credential](#)" (PDF; 115KB) provides information on understanding GED test scores and estimating national class rank from GED test scores. This information is useful for both the test-taker and the college or university admissions office.

Requesting Official Transcripts of GED Tests Results

If a test-taker has already taken the GED Tests and wants to find out how to get a transcript of their scores, please visit our [transcript request page](#) on this web site.

Interpreting GED test scores earned prior to 2002

Many adults took and passed the GED Tests prior to 2002. Prior to 2002, standard scores ranged from 20 to 80. Like the 2002 Series GED Tests, percentile ranks, ranging from 1 to 99, were also reported. The average standard score for a sample of U.S. graduating high school seniors was 50 for each test in the battery. About half of these seniors earned standard scores above 50 and about half earned standard scores below 50 on each test. Approximately 68 percent of all graduating high school seniors earned scores between 40 and 60 on the GED standard score scale prior to 2002. Only 2 percent of graduating high school seniors earned scores lower than 30 or higher than 70 prior to 2002.

GED credential recipients who earned their credential prior to 2002 and college or university admissions officers should review the brochure from the 1988 Series GED Tests titled "[College Admissions and the GED Graduate](#)" (PDF; 50KB).

Comparing scores across the 3-digit scale of the 2002 series and the 2-digit scale of the prior series is not as simple as adding a zero to the end of the 2-digit score. This is because each new test series reflects more recent content standards, and sometimes the format of the test changed (e.g., the addition of the essay to the Language Arts, Writing Test in 2002). Also, percentile ranks and estimated national class ranks may change across test series.

Please direct questions about this page to:

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