TASC Test Math Practice Items

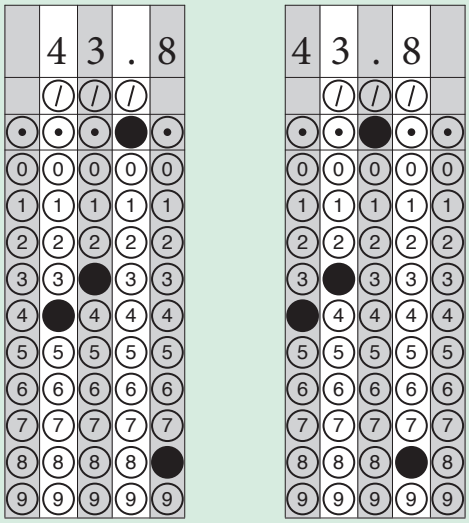
Use these items to practice for the TASC Math subtest. Before you begin, review the information below titled Using Gridded-Response Item Blocks. Once you reach the end of the test, check your responses against the answer key provided. Take the time to read the information preceding the answers to understand what you'll need to know and be able to do to prepare yourself to pass the TASC test. In the following multiple-choice questions, circle the correct answer then check your answers using the answer key provided.

Good luck preparing for the TASC test!

Using Gridded-Response Item Blocks

The Mathematics section of the TASC test contains both multiple-choice items and gridded-response items. Gridded-response items ask for a numerical answer that may be an integer, a decimal, or a fractional value. The grid consists of bubbles containing the integers 0 through 9, the fraction bar (/), and a decimal point (.). When you enter a numerical value into the grid, you will then shade the appropriate bubbles beneath the numbers and symbols.

The numbers may be entered from either the right or the left. The scoring software will treat them the same either way. For example, if you had an item with an answer of 43.8, either of the following responses would be scored as correct.



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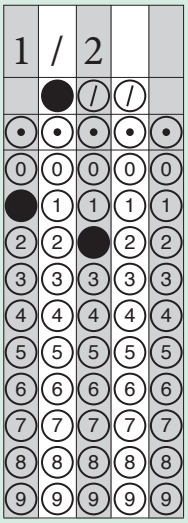
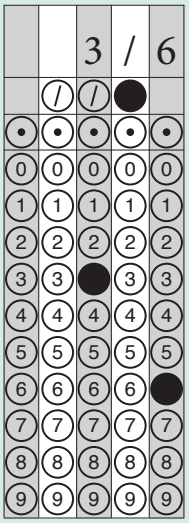
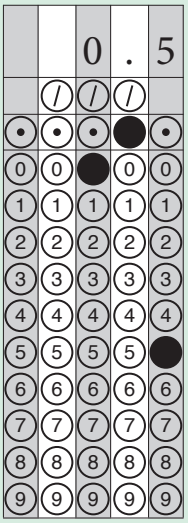
Using Gridded-Response Item Blocks (Con't)

Fractions and decimal values may also be entered. If you had an item with an answer of $\frac{3}{6}$, it could be simplified into either $\frac{1}{2}$ or 0.5 and all of these responses would be scored as correct by the system.







1. When a spherical balloon is filled with air, it has a diameter of 6 inches. Which of these gives the best estimate for the volume of air in the balloon, in cubic inches (cu in.)

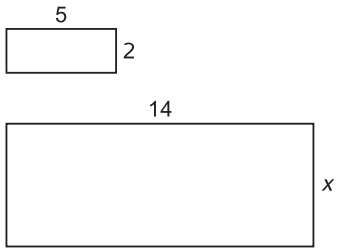
A 63.6

B 108.0

C 113.1

D 150.8

2. Two rectangles are similar and the dimensions shown are in centimeters.



What is the measure of *x*, in centimeters (cm)?

A 4.0

B 5.6

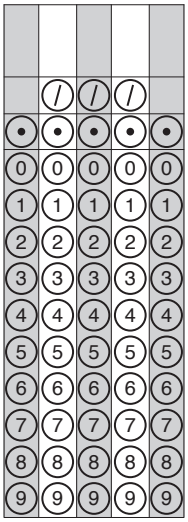
C 8.4

D 11.0

3. **Sharon made a scale drawing of a triangular park. The coordinates for the vertices of the park are:**
(– 10, 5)
(15, 5)
(10, 12)

Her scale is 1 unit = 1 meter.

What is the area of the triangular park in square meters (sq m)?



4. What is the solution to the equation $2(x - 10) + 4 = -6x + 2$?

A $-\frac{9}{2}$

B 1

C $\frac{9}{4}$

D $\frac{5}{2}$

5. Water pours into a tank over a 10-minute period. The graphed function $f(x)$ models the flow rate, in gallons per minute (GPM).

Over which of these intervals does the flow rate increase by the greatest amount?

A $x = 0$ to $x = 1$

B $x = 2$ to $x = 3$

C $x = 4$ to $x = 5$

D $x = 8$ to $x = 9$

6. The table gives selected values for the linear function $f(x)$.

x	$f(x)$
5	12
10	19
15	26
20	33

Which of these functions has the same slope as $f(x)$?

A $g(x) = x + 7$

B $h(x) = 2x + 2$

C $q(x) = \frac{4}{5}x + 8$

D $p(x) = \frac{7}{5}x + 5$

7. Tom has two cubes with the numbers 1 through 6 on the sides. If he rolls the cubes at the same time and finds the sum, the sample space of the possible outcomes is the set { 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12}. Tom rolls the cubes. One of the cubes shows a number less than or equal to 3. The other cube shows the number 4. Which subset of the sample space describes the set of possible outcomes for Tom?

A {5, 6}

B {4, 5, 6}

C {5, 6, 7}

D {4, 5, 6, 7}

8. The price of a certain sofa, S, is \$900 more than the price of a chair, C. The total price for the sofa and chair is \$1200. Which system of equations can be used to find the price of each piece of furniture?

A $\begin{cases} C = S - 900 \\ S + C = 1200 \end{cases}$

B $\begin{cases} C = S + 900 \\ S - C = 1200 \end{cases}$

C $\begin{cases} C = S + 900 \\ S + C = 1200 \end{cases}$

D $\begin{cases} C = S + 1200 \\ S - C = 900 \end{cases}$

9. Consider this polynomial expression.

$(x^2 - x + 1) + (2x^2 + x - 9)$

What is the sum of the polynomials?

A $x^2 - 8$

B $3x^2 - 8$

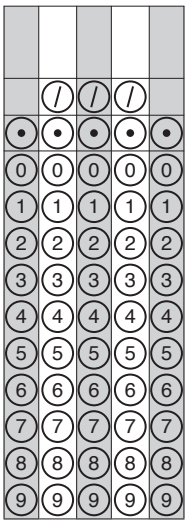
C $3x^2 - 2x - 8$

D $3x^2 + 2x - 8$

10. Consider this function.

$f(x) = -2x + 7$

What is $f(-3)$?



11. The time, T, it takes for 2 people working together to complete a job is given by $T = \frac{1}{r_1 + r_2}$.

In the equation,

- r_1 is the work rate of the first person
- r_2 is the work rate of the second person

Which formula could be used to find r_1 if you know the values for T and r_2?

A $r_1 = \frac{T - r_2}{r_2}$

B $r_1 = \frac{1 - Tr_2}{T}$

C $r_1 = \frac{T}{r_2} - r_2$

D $r_1 = \frac{Tr_2}{T + r_2}$

12. While visiting Brazil for 6 days, Shan has a budget to spend no more than 16 U.S. dollars per day on food. The conversion rate is 1 U.S. dollar ($) = 3.16 Brazilian Real (R$). The first day of vacation, he spends R$63.20 on food.

What is the most amount of dollars ($) per day Shan can spend on food for the remaining 5 days of his trip?

$\$$_____

13. Select the **three** expressions that result in a rational number.

1. $\frac{5}{2} \cdot \frac{3}{11}$
2. $\frac{1}{\sqrt{4}}$
3. $2\sqrt{2}\sqrt{9}$
4. $4\sqrt{2 \cdot 9}$
5. $\sqrt{4}\sqrt{16}$
6. $5^2\sqrt{3}$

Answer Key

After taking these practice items, you can check your answers with the following answer key. For your added benefit, answers come with explanations to help you understand why they're right. If you do well on the practice test, then you know you may be prepared to take the official TASC Readiness Test. If you struggle on the practice test, then you know you may still have more work to do to get prepared.

1. This multiple-choice item will provide evidence regarding your ability to recognize and use geometric formulas to compute quantities of interest, a skill that has a wide array of practical and business applications outside of a school setting. Did you know that you can use an approved scientific calculator within the testing environment, as well as a formula sheet?

Answer: C
Explanation for Correct Response:
The correct response demonstrates evidence of your ability to calculate the volume of a sphere with a radius of inches.

2. Deriving the correct response requires you to apply proportional reasoning skills in a geometric context. Writing proportions to model situations is one of the most fundamental concepts in mathematical modeling.

Answer: B
Explanation for Correct Response:
The correct response demonstrates evidence that you can apply proportional reasoning to $\frac{14}{5} = \frac{x}{2}$, obtaining the solution $x = \frac{28}{5} = 5.6$.

3. A key concept in coordinate geometry is analyzing graphs to determine distances and areas that depend on the scale and units of measure. This gridded-response item requires you to use coordinates to compute an area. Since a coordinate grid graphic is not given, in this instance you must visualize the situation in order to calculate the area. At other times, you may encounter test items that do include the graphic.

Answer: 87.5
Explanation for Correct Response:
The correct response demonstrates evidence that you can calculate the area of a triangle, given coordinates.

4. This selected-response item requires you apply algebraic rules to solve a linear equation. The order of operations plays an important role in this item, as does recognition and manipulation of like terms. The item not only allows an inference to be made about your mastery of the content standard, but also provides evidence regarding your mastery of looking for and making use of structure.

Answer: C
Explanation for Correct Response:
The correct reponse demonstrates evidence that you can apply algebraic rules, including distributive property, to solve for x.

5. A key concept in functions is recognizing features of the graphs of the functions. This selected-response item provides an opportunity for you to demonstrate an understanding of how quantities change with respect to one another given the model graph.

Answer: A
Explanation for Correct Response:
The correct response demonstrates evidence that you can recognize that A is the only interval where the flow rate is increasing.

6. Linear functions are among the most basic functions in algebra. You will become familiar with the key concepts of linear functions and learn how to use these functions to model real-life situations in basic courses. This selected-response item requires you to compare the slopes of two linear functions that are represented in a different way.

Answer: D
Explanation for Correct Response:
The correct response demonstrates evidence that you can determine the slope of $\frac{7}{5}$, and then compare it with the equations.

Answer Key (cont'd)

7. Before you can answer a question about the likelihood of an event occurring, you must consider the sample space (the set of possible outcomes) as well as the subset that describes the event of interest. To avoid misinterpretation, the set of possible outcomes is explicitly stated in this selected-response item, allowing you to focus on selecting the proper subset of the sample space that meets the criteria using quantitative reasoning skills.

Answer: C
Explanation for Correct Response:
The correct response demonstrates evidence that you can determine the subset representing the possible outcomes.

8. This selected-response item will provide evidence regarding your ability to analyze and represent constraints by using a system of equations. The item requires that you identify the system of equations that models the contextual situation by interpreting key words and phrases.

Answer: A
Explanation for Correct Response:
The correct response demonstrates evidence that you can translate verbal description of constraints into the correct system of equations.

9. A fundamental skill is the ability to proficiently compute with algebraic expressions, specifically adding, subtracting, and multiplying polynomials. This provides the foundation for using algebraic expressions, equations, inequalities, and functions as a means to model phenomena in the real world.

Answer: B
Explanation for Correct Response:
The correct response demonstrates evidence that you can recognize that B is the only answer that demonstrates correct addition of terms.

10. Proficiency with the concept of functions involves both familiarity with functional notation and the ability to evaluate a given function for a specific numerical value. This item requires you to apply these skills, evaluating a basic linear equation for a given input value. Obtaining the proper solution also requires demonstrating the conceptual understanding of how to multiply negative numbers together.

Answer: 13
Explanation for Correct Response:
The correct response demonstrates evidence that you can solve a linear function for a given value, as in $f(-3) = -2 \times -3 + 7 = 6 + 7 = 13$.

11. This multiple-choice item requires you to isolate a particular quantity of interest. The item involves many of the same skills as those in the previous item, but adds an important concept, attending to quantities within expressions. Many recognize the fact that some type of inverse relation exists between the time it takes to complete the job and the work rates, but fail to consider the sum of the rates as one unified structure.

Answer: B
Explanation for Correct Response:
The correct response demonstrates evidence that you can translate an algebraic equation to isolate the quantity of interest, as in:

$$T = \frac{1}{r_1 + r_2}$$

$$r_1 + r_2 = \frac{1}{T}$$

$$r_1 = \frac{1}{T} - r_2$$

$$r_1 = \frac{1 - Tr_2}{T}$$

Answer Key (cont'd)

12. **2 points**

$15.20

AND

Convert R$ to $: $\frac{63.20}{3.16} = 20$

Total $ for budget: (16)(6) = 96

96 – 20 = 76

$\frac{76}{5} = 15.2$

1 Point

Correct answer only

OR

Incorrect answer with correct work shown

13. **1 Point**

Correct Answer:

1. $\frac{5}{2} \cdot \frac{3}{11}$

2. $\frac{1}{\sqrt{4}}$

5. $\sqrt{4}\sqrt{16}$