



Grade 8

FAST Mathematics

Sample Test Materials

Answer Key

The Grade 8 FAST Mathematics Sample Test Materials Answer Key provides the correct response(s) for each item on the sample test. The sample items and answers are not intended to demonstrate the length of the actual test, nor should student responses be used as an indicator of student performance on the actual test.

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FAST Mathematics Sample Items Answer Key

1. Four numbers are shown.

π	$\sqrt{8}$	$0.\overline{23}$	$\sqrt{49}$
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Complete the statement explaining which two numbers are rational. For each box, fill in the bubble before the pair of numbers or word that is correct.

The two rational numbers are

<input type="radio"/> A π and $\sqrt{8}$
<input type="radio"/> B π and $0.\overline{23}$
<input type="radio"/> C $\sqrt{8}$ and $\sqrt{49}$
<input checked="" type="radio"/> D $0.\overline{23}$ and $\sqrt{49}$

because they

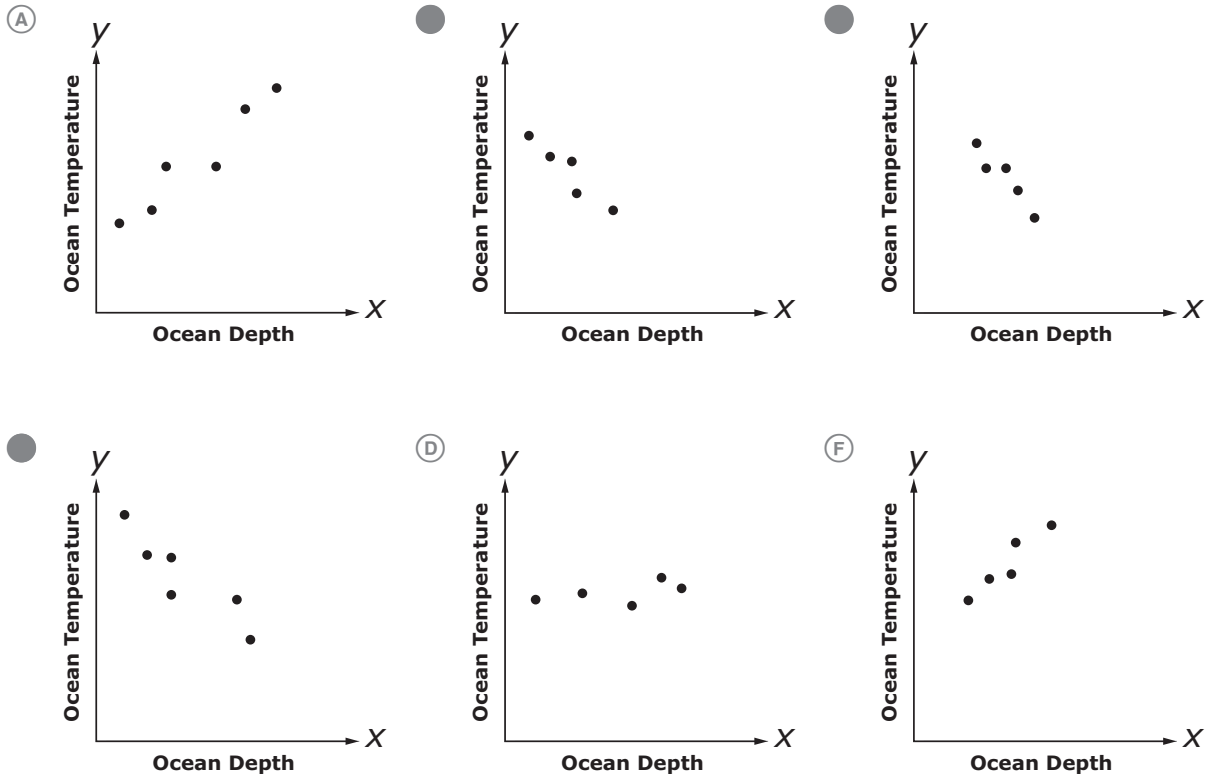
<input checked="" type="radio"/> can
<input type="radio"/> cannot

be expressed as a ratio of two integers.

FAST Mathematics Sample Items Answer Key

2. Gia records the temperature of ocean water at different depths and finds that the relationship between temperature and depth have a negative association.

Select all the scatter plots that could represent Gia's data.



Option B: **This answer is correct.** The student recognized that the scatter plot shows a negative relationship since the y-values generally tend to decrease as the x-values increase.

Option C: **This answer is correct.** The student recognized that the scatter plot shows a negative relationship since the y-values generally tend to decrease as the x-values increase.

Option E: **This answer is correct.** The student recognized that the scatter plot shows a positive relationship since the y-values generally tend to increase as the x-values increase.

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3. An expression is shown.

$$\left(\frac{-1}{2}\right)^3 + \sqrt{8^2 - 15}$$

What is the value of the expression?

- $6\frac{7}{8}$
- $7\frac{1}{8}$
- $48\frac{7}{8}$
- $49\frac{1}{8}$

Option A: This answer is correct. The student correctly determined the value of the expression to be $\frac{55}{8}$ or $6\frac{7}{8}$.

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4. An expression is shown.

$$(2.3 \times 10^4) \times (4.1 \times 10^2)$$

Write your response in the shaded box below and fill in the bubble before the correct power of 10 to show the value of the expression in scientific notation.

9.43	×	<input type="radio"/> A 10^2 <input type="radio"/> B 10^4 <input checked="" type="radio"/> C 10^6 <input type="radio"/> D 10^8
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Other correct responses: any equivalent expression in scientific notation

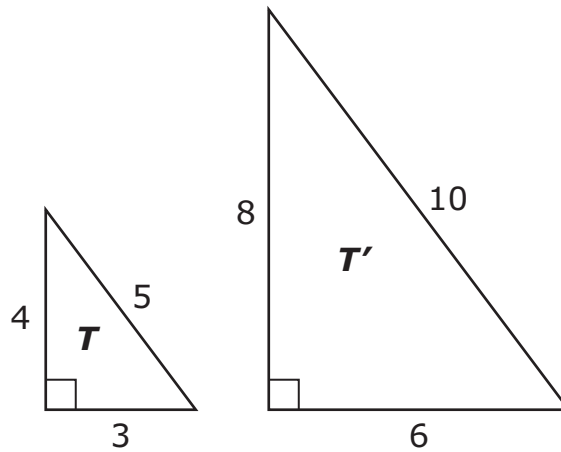
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5. Fill in bubbles to identify the number of solutions to each equation.

	No Solutions	One Solution	Infinitely Many Solutions
$3x - 5 = 3(x - 2) + 1$	<input type="radio"/> A	<input type="radio"/> B	<input checked="" type="radio"/>
$3x - 5 = -9x + 15$	<input type="radio"/> D	<input checked="" type="radio"/>	<input type="radio"/> F
$3x - 5 = 3x + 10$	<input checked="" type="radio"/>	<input type="radio"/> H	<input type="radio"/> I

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6. The transformation of triangle T to triangle T' is shown.



Select a word and a value to complete the description of the transformation. For each blank, fill in the bubble **before** the word or value that is correct.

Triangle T is _____ [congruent similar] to triangle T' .

Triangle T can be transformed to triangle T' using a dilation with a scale factor of _____ [$\frac{1}{2}$ 2 4].

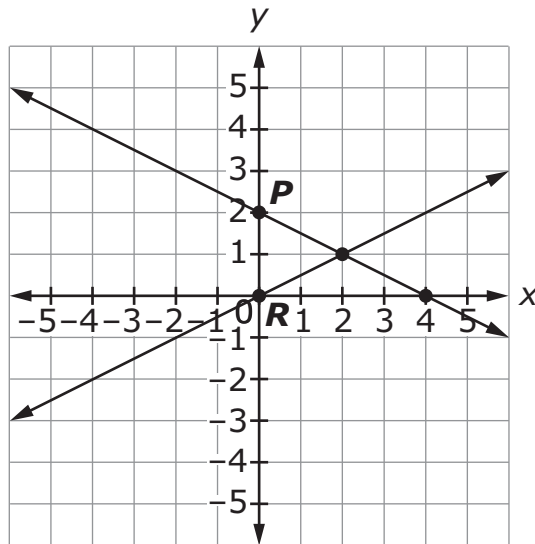
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7. A system of equations is shown.

$$y = \frac{1}{2}x$$

$$y = -\frac{1}{2}x + 2$$

Kayla graphs the system to solve it. She marks her solutions with P and R .



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This question has **two** parts.

Part A

Which statement describes Kayla's solutions?

- Ⓐ Her solutions are correct.
- Ⓑ She marked the y -intercepts instead of the x -intercepts.
- Ⓒ She marked the y -intercepts instead of the intersection point of the two lines.
- Ⓓ She marked only the y -intercepts instead of the x - and y -intercepts.

Part B

What is a solution to the system of equations?

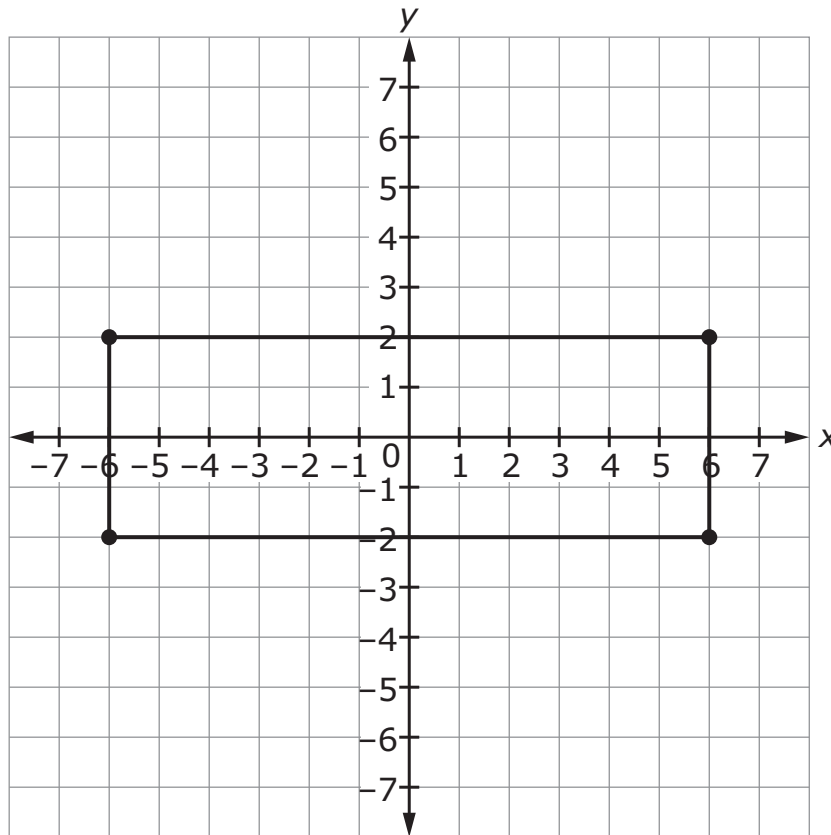
Write your responses in the shaded boxes below.

(,)

Option C: This answer is correct. The student correctly identified that Kayla made a mistake and what her mistake was.

Other correct responses: for Part B, any equivalent values

8. A figure on a coordinate plane is shown.



Select all the transformations that will map the figure onto itself.

- (A) translation up 4 units
- (B) reflection across the y-axis
- (C) dilation by a factor of 3 about the origin
- (D) rotation 90 degrees clockwise about the origin
- (E) rotation 180 degrees counterclockwise about the origin

Option B: This answer is correct. The student identified that this reflection will carry the rectangle onto itself.

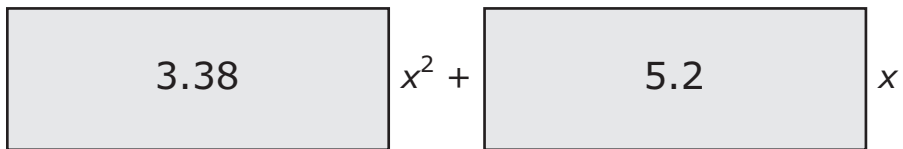
Option E: This answer is correct. The student identified that this rotation will carry the rectangle onto itself.

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9. An expression is shown.

$$(1.3x)(2.6x + 4)$$

Write your responses in the shaded boxes below to complete the product of the expression.


$$\boxed{3.38} x^2 + \boxed{5.2} x$$

Other correct responses: any equivalent values



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