STAAR®

State of Texas Assessments of Academic Readiness

GRADE 8
Mathematics

Paper Item Sampler

1   Malika is making lemonade to sell at a school fundraiser:

- She purchased a new lemon squeezer for $9.00.
- The cost of the ingredients for each serving of lemonade is $1.50.
- She will be selling each serving of lemonade for $2.25.

Write an inequality that represents the minimum number of servings of lemonade, x, Malika must sell for the money from her sales to exceed the total cost of making the lemonade.

Record your answer in the space provided.

	$x >$		$x +$	

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2   Keisha sells hats for $10.50 each and scarves for $12.75 each.

Write an equation that represents the total cost, C, of h hats and 6 scarves.

Record your answer in the space provided.

3 Mr. Jenkins deposited $1,250 into an account that earns 4.25% simple interest annually. He made no additional deposits or withdrawals.

What will be the balance in Mr. Jenkins' account in dollars and cents at the end of 4 years?

Record your answer in the space provided.

4 The length of a rectangular frame is 15 inches, and the width of the frame is 8 inches. What is the length of a diagonal of this frame in inches?

Record your answer in the space provided.

5 A lifeguard recorded the daily average temperature in degrees Fahrenheit and the number of swimmers at the pool each day for 29 days. The scatterplot displays the data.

Pool Data
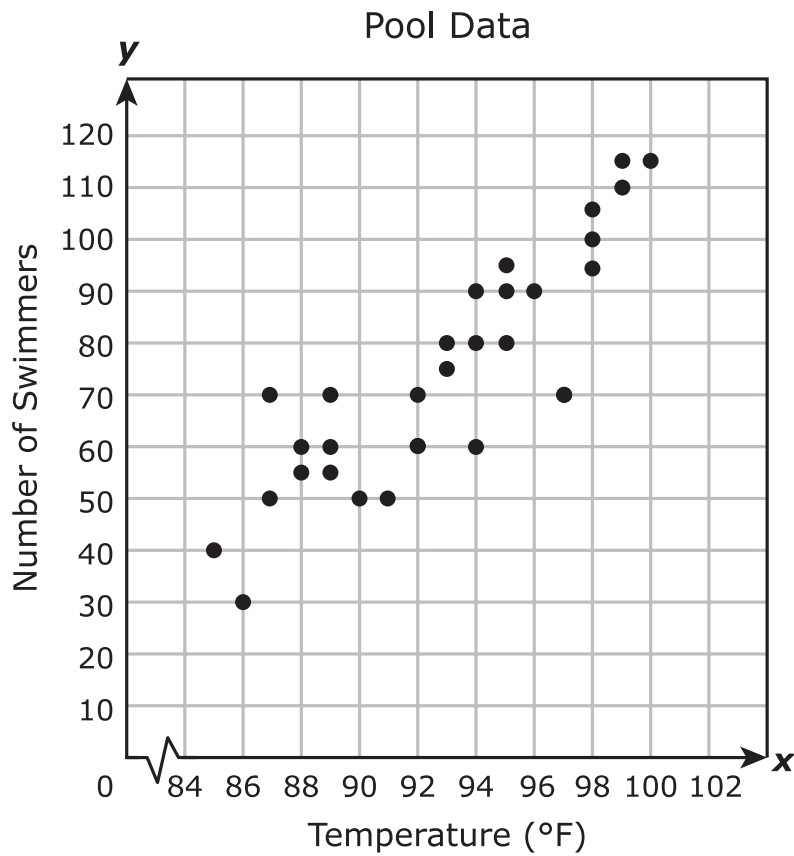
Complete the statements to best describe the relationship between the daily average temperature and the number of swimmers at the pool.

Select **ONE** correct answer in each box to complete each sentence.

As the *x*-values increase, the *y*-values
Ⓐ decrease
Ⓑ increase
.

This represents a
Ⓐ negative
Ⓑ positive
Ⓐ linear
Ⓑ nonlinear
association between the

daily average temperature and the number of swimmers at the pool.

6 On a coordinate grid, triangle *PQR* is transformed by the rule $(x, y) \rightarrow \left(\frac{3}{5}x, \frac{3}{5}y \right)$ to create triangle *P'Q'R'*. Create true statements about the relationship between triangle *PQR* and triangle *P'Q'R'*.

Select **ONE** correct answer in each box to complete each sentence.

The corresponding side lengths of the triangles are | (A) equal / (B) not equal |.

The corresponding angles of the triangles are | (A) congruent / (B) not congruent |.

7 The ordered pair (2, 3) represents a point on the graph of a proportional relationship.

Which two ordered pairs could represent other points on the graph of the proportional relationship?

Shade the **TWO** correct circles that represent the points.

Proportional Relationship
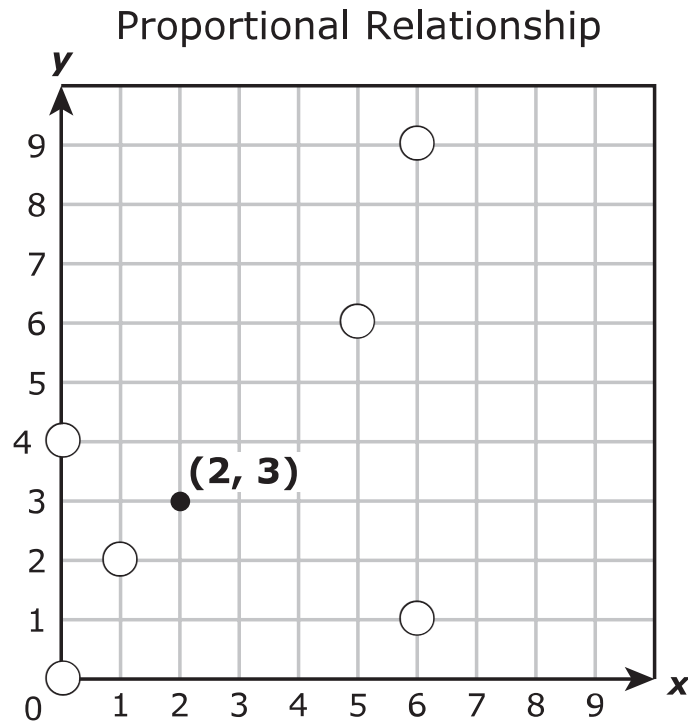
8 Between which two consecutive integers on the number line is $\sqrt{17}$?

Shade the **TWO** correct circles that represent the points.

0   1   2   3   4   5   6   7   8   9   10

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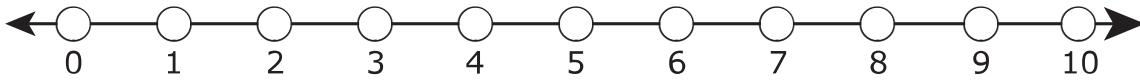
9 A set of numbers is shown. Place the numbers in order from least to greatest.

Select the correct answer for each box.

A	B	C	D	E
$\dfrac{67}{10}$	-2π	$3\sqrt{5}$	$6\dfrac{3}{4}$	-6.25

Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ   Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ   Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ   Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ   Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ

Least   Greatest

10 Quadrilateral *MNPQ* is translated 8 units to the left and 4 units up to create quadrilateral *M'N'P'Q'*. Write a rule that describes the translation that is applied to quadrilateral *MNPQ* to create quadrilateral *M'N'P'Q'*.

Select the correct answer for each box. Not all answers will be used.

A $x - 8$ **B** $x + 8$ **C** $8x$ **D** $y - 4$ **E** $y + 4$ **F** $4y$

Quadrilateral *MNPQ* was translated according to the rule

$(x, y) \rightarrow ($ Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ Ⓕ , Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ Ⓕ $)$.

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11 A triangle undergoes a single transformation. For each type of transformation, indicate which features of the triangle remain the same.

Select **ONE** correct answer in each row.

Transformation	Orientation of the Vertices	Side Lengths
Dilation	Ⓐ	Ⓑ
Reflection	Ⓐ	Ⓑ

12 The Venn diagram shows the relationship among several sets of numbers.
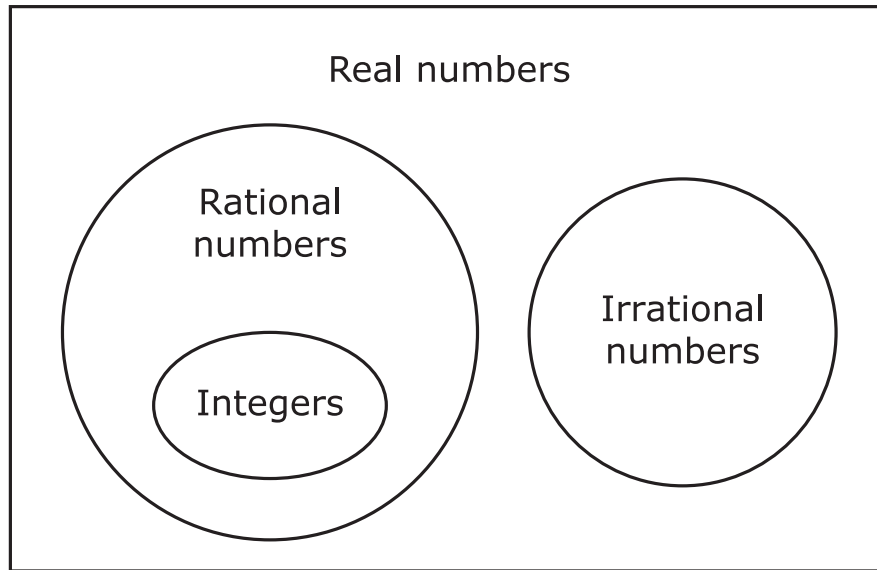
Indicate whether each number in the table belongs in each of these sets: irrational numbers, rational numbers, and integers.

Select **ONE** correct answer in each row.

Number	Irrational Number	Rational Number
$\sqrt{3}$	Ⓐ	Ⓑ
$\sqrt{9}$	Ⓐ	Ⓑ

13 Which transformations applied to a triangle on a coordinate grid would preserve congruence?

Select **TWO** correct answers.

○ $(x, y) \rightarrow \left(-\frac{1}{4}x, \frac{1}{4}y\right)$

○ $(x, y) \rightarrow (x + 7, y - 8)$

○ $(x, y) \rightarrow \left(\frac{2}{3}x, \frac{2}{3}y\right)$

○ A reflection of the triangle across the x-axis

○ A dilation by a scale factor of 2 with the origin as the center of dilation

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14 Which sets of ordered pairs represent y as a function of x?

Select **TWO** correct answers.

○ $\{(0, 0), (-1, 2), (-1, -2), (-2, 4), (-2, -4)\}$

○ $\{(0, 0), (1, 1), (2, 4), (3, 9), (3, 16)\}$

○ $\{(0, 0), (0, 1), (0, 2), (0, -1), (0, -2)\}$

○ $\{(0, 0), (-1, -0.5), (-2, -1), (-3, -1.5), (-4, -2)\}$

○ $\{(0, 0), (1, 3), (2, 6), (3, 9), (4, 12)\}$

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