

## PSSA MATHEMATICS

A calculator is permitted for use in solving questions numbered 5–43 in this sampler.

## A-N.1.1

5. Craig uses a ruler to determine the length of two pieces of metal. He records the length of each piece of metal as a rational number. Which statement **best** explains whether the sum of the two lengths Craig recorded must also be a rational number?
- A. When adding two rational numbers  $\frac{a}{b}$  and  $\frac{c}{d}$ , the numerators  $a$  and  $c$  do not have to be integers. Therefore, the sum does not have to be a rational number.
- B. When adding two rational numbers  $\frac{a}{b}$  and  $\frac{c}{d}$ , the common denominator  $bd$  does not have to be an integer. Therefore, the sum does not have to be a rational number.
- C. When adding two rational numbers  $\frac{a}{b}$  and  $\frac{c}{d}$ , the sum is  $\frac{ac}{bd}$ , and both the numerator and denominator are integers. Therefore, the sum must be a rational number.
- D. When adding two rational numbers  $\frac{a}{b}$  and  $\frac{c}{d}$ , the sum is  $\frac{ad + bc}{bd}$ , and both the numerator and denominator are integers. Therefore, the sum must be a rational number.

**PSSA MATHEMATICS****A-N.1.1.1**

6. Which statement correctly describes the number  $\frac{62}{495}$  and its equivalent decimal notation?
- A. The number  $\frac{62}{495}$  is a rational number and its equivalent decimal notation is a repeating decimal number.
  - B. The number  $\frac{62}{495}$  is a rational number and its equivalent decimal notation is a terminating decimal number.
  - C. The number  $\frac{62}{495}$  is an irrational number and its equivalent decimal notation is a repeating decimal number.
  - D. The number  $\frac{62}{495}$  is an irrational number and its equivalent decimal notation is a terminating decimal number.

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A-N.1.1.2

A-N.1.1.1

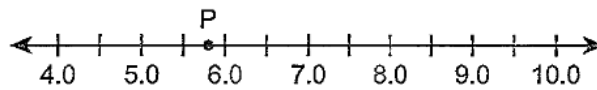
7. Amanda graphed a linear function with the equation  $y = 1.\bar{4}x$ . Which statement about the slope of Amanda's line is true?
- A. The slope is a rational number that can be written as  $\frac{13}{9}$ .
  - B. The slope is a rational number that can be written as  $\frac{14}{10}$ .
  - C. The slope is an irrational number that can be written as  $\frac{13}{9}$ .
  - D. The slope is an irrational number that can be written as  $\frac{14}{10}$ .

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A-N.1.1.4

A-N.1.1.5

8. On the number line below, point P shows the location of an irrational number.



Which expression has a value that is **greater** than the irrational number represented by point P?

- A.  $\sqrt{7} - 1$
- B.  $2\sqrt{7}$
- C.  $4 + \sqrt{7}$
- D.  $7 - \sqrt{7}$

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A-N.1.1.4

C-G.2.1.2

9. The lengths of the legs of two right triangles are listed below.

- triangle A: 5 inches and 5 inches
- triangle B: 4 inches and 6 inches

Which statement correctly compares the lengths, in inches, of the hypotenuses for the two triangles?

A.  $2\sqrt{5} \approx 4.2$   
 $13\sqrt{2} \approx 14.4$   
 $2\sqrt{5} < 13\sqrt{2}$

B.  $2\sqrt{5} \approx 4.5$   
 $13\sqrt{2} \approx 18.4$   
 $2\sqrt{5} < 13\sqrt{2}$

C.  $5\sqrt{2} \approx 6.4$   
 $2\sqrt{13} \approx 5.6$   
 $5\sqrt{2} > 2\sqrt{13}$

D.  $5\sqrt{2} \approx 7.1$   
 $2\sqrt{13} \approx 7.2$   
 $5\sqrt{2} < 2\sqrt{13}$

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A-N.1.1.5

B-E.1.1.2

10. A packing crate in the shape of a cube has a volume of 70 cubic feet. The length ( $x$ ), in feet, of one side of the cube can be found by solving  $x^3 = 70$ . Which point on the number line represents the length, in feet, of one side of the cube?

