Which decimal is equivalent to $\dfrac{6}{11}$?

Select your answer.

○ A. $0.18\overline{3}$

○ B. $0.1\overline{83}$

○ C. $0.5\overline{4}$

○ D. $0.\overline{54}$

1. What do you know about the problem?

2. What questions do you have?

3. Explain your reasoning or thinking in solving the problem.

8th Grade PARCC EOY Sample Assessment Item #5: Standard 8.EE.3

The body of a 154-pound person contains approximately 2×10^{-1} milligrams of gold and 6×10^{1} milligrams of aluminum. Based on this information, the number of milligrams of aluminum in the body is how many times the number of milligrams of gold in the body?

Enter your answer in the box.

1. What do you know about the problem?

2. What questions do you have?

3. Explain your reasoning or thinking in solving the problem.

Which equation has **both** 4 and -4 as possible values of y?

○ A. $y^2 = 8$

○ B. $y^3 = 8$

○ C. $y^2 = 16$

○ D. $y^3 = 64$

1. What do you know about the problem?

2. What questions do you have?

3. Explain your reasoning or thinking in solving the problem.

When the input to a function is -2, the output is 4.

Which statement about this function **must** be true?

○   A.   An input of -2 has infinitely many possible outputs.

○   B.   An input of -2 has exactly one possible output.

○   C.   An output of 4 has infinitely many inputs.

○   D.   An output of 4 has exactly one input.

1. What do you know about the problem?

2. What questions do you have?

3. Explain your reasoning or thinking in solving the problem.

Which expressions are equivalent to $\dfrac{3^{-8}}{3^{-4}}$?

Select **all** that apply.

- A. 3^{-12}

- B. 3^{-4}

- C. 3^2

- D. $\dfrac{1}{3^2}$

- E. $\dfrac{1}{3^4}$

- F. $\dfrac{1}{3^{12}}$

1. What do you know about the problem?

2. What questions do you have?

3. Explain your reasoning or thinking in solving the problem.

Select the point on the number line that **best** approximates the location of $\sqrt{14}$.
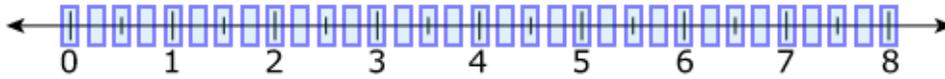
1. What do you know about the problem?

2. What questions do you have?

3. Explain your reasoning or thinking in solving the problem.

In $\triangle ABC$, $\overline{BD}$ is perpendicular to $\overline{AC}$. The dimensions are shown in centimeters.
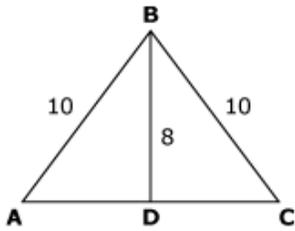
What is the length of $\overline{AC}$?

Enter your answer in the box.

	centimeters

1. What do you know about the problem?

2. What questions do you have?

3. Explain your reasoning or thinking in solving the problem.

Filipo is building a rectangular sandbox for his younger brother. The length of the sandbox is 1 foot longer than twice the width of the sandbox. The perimeter of the sandbox is 29 feet.

Part A

Which equation could be used to determine w, the width, in feet, of the sandbox?

- A. $w + w + 2 = 29$

- B. $w + 2w + 1 = 29$

- C. $2w + 2(w + 2) = 29$

- D. $2w + 2(2w + 1) = 29$

Part B

What is the width, in feet, of the sandbox?

Enter your answer in the space provided.

▸ Numbers
▸ Arithmetic and Units
▸ Exponents and Roots
▸ Relations
▸ Geometry
▸ Groups

1. What do you know about the problem?

2. What questions do you have?

3. Explain your reasoning or thinking in solving the problem.

The table shows the results of a random survey of students in grade 7 and grade 8. Every student surveyed gave a response. Each student was asked if he or she exercised less than 5 hours last week or 5 or more hours last week.

	Less than 5 hours	5 or more hours
Grade 7 Students	49	63
Grade 8 Students	58	51

Based on the results of the survey, which statements are true? Select **each** correct statement.

☐ A. More grade 8 students were surveyed than grade 7 students.

☐ B. A total of 221 students were surveyed.

☐ C. Less than 50% of the grade 8 students surveyed exercised 5 or more hours last week.

☐ D. More than 50% of the students surveyed exercised less than 5 hours last week.

☐ E. A total of 107 grade 7 students were surveyed.

1. What do you know about the problem?

2. What questions do you have?

3. Explain your reasoning or thinking in solving the problem.

Functions W and Z are both linear functions of x.
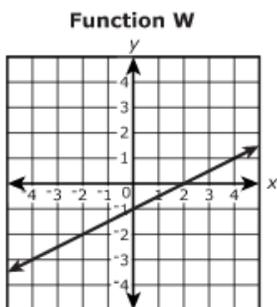
Function W

Function Z

x	y
−2	−2.5
0	−2
2	−1.5
4	−1

Which statement comparing the functions is true?

☐ A. The slope of Function W is less than the slope of Function Z.

☐ B. The slope of Function W is greater than the slope of Function Z.

☐ C. The y-intercept of Function W is equal to the y-intercept of Function Z.

☐ D. The y-intercept of Function W is less than the y-intercept of Function Z.

☐ E. The y-value when $x = -4$ for Function W is greater than the y-value when $x = -4$ for Function Z.

☐ F. The y-value when $x = -4$ for Function W is equal to the y-value when $x = -4$ for Function Z.

1. What do you know about the problem?

2. What questions do you have?

3. Explain your reasoning or thinking in solving the problem.

Two different proportional relationships are represented by the equation and the table.

Proportion A

$y = 9x$

Proportion B

x	y
0	0
3	34.5
5	57.5
8	92

Use the drop-down menus to complete the sentence, comparing the rates of change of the proportional relationships.

The rate of change in Proportion A is ⎡Choose... ▼⎤ ⎡Choose... ▼⎤ than the rate of change in Proportion B.

Choose...
1.5
2.5
25.5
43.5

Choose...
more
less

1. What do you know about the problem?

2. What questions do you have?

3. Explain your reasoning or thinking in solving the problem.

Functions A, B, and C are linear functions.

Some values of Function A are shown in the table.

Function A

x	y
3	3
5	7
6	9

The graph of Function B has a y- intercept of $(0,3)$ and an x- intercept of $(-5,0)$.

Function C is defined by the equation $y = (3x + 1)$.

Order the linear functions based on rate of change, from least to greatest.

Least Rate of Change   **Greatest Rate of Change**

| Function A | Function B | Function C |

1. What do you know about the problem?

2. What questions do you have?

3. Explain your reasoning or thinking in solving the problem.

A solution is 20% bleach.

Create a graph that represents all possible combinations of the number of liters of bleach, contained in number of liters of solution.

To graph a line, select two points on the coordinate plane. A line will be drawn through the points.
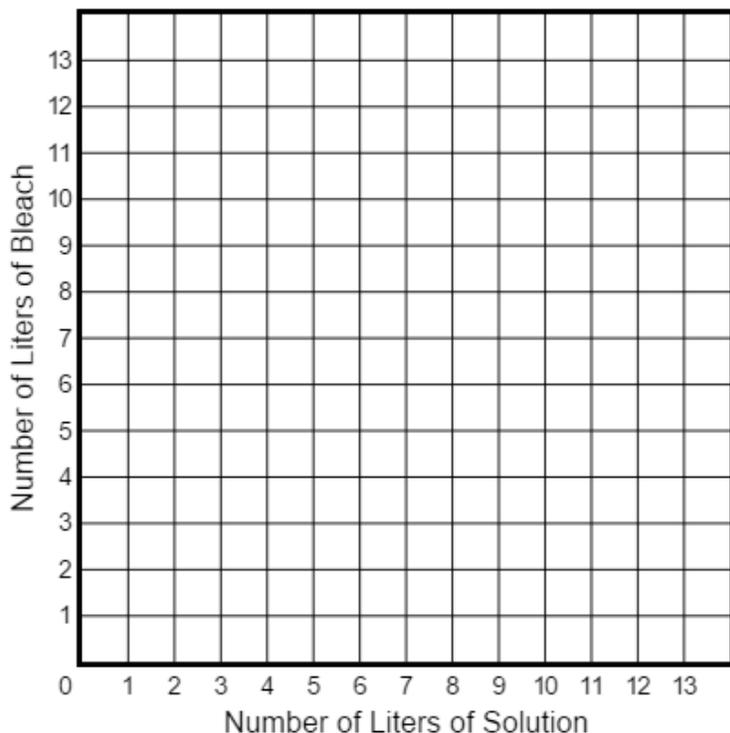
1. What do you know about the problem?

2. What questions do you have?

3. Explain your reasoning or thinking in solving the problem.

Liz saw the number shown on her calculator screen.

$6_E{-}7$

Which numbers represents the number Liz saw?

A. 0.0000006

B. 0.00000006

C. $-6,000,000$

D. $-60,000,000$

1. What do you know about the problem?

2. What questions do you have?

3. Explain your reasoning or thinking in solving the problem.