Grade 8 FAST Mathematics

2025 Released Test Items

Introduction

Section 1008.22(8), Florida Statutes (F.S.), requires the Department to publish each statewide, standardized assessment administered, excluding retakes, at least once on a triennial basis, with the initial publication occurring after the Spring 2024 test administration. The initial publication of assessments was required to include, at a minimum, the grade 3 Mathematics and English Language Arts (ELA) Reading assessments, the grade 10 ELA Reading assessment and the Algebra 1 End-of-Course (EOC) Assessment. Per statute, released content must have appeared on tests in the administration year immediately preceding release. Based on those requirements, below is a proposed timeline for the release of operational tests beginning with the 2023–24 school year.

June 2024	June 2025	June 2026
Grade 3 Mathematics & ELA Reading	Grade 5 Mathematics & ELA Reading	Grade 4 Mathematics & ELA Reading
Grade 6 Mathematics & ELA Reading	Grade 8 Mathematics & ELA Reading	Grade 7 Mathematics & ELA Reading
Grade 8 Science	Grade 5 Science	Biology 1 EOC
Grade 10 ELA Reading	Grade 9 ELA Reading	
Algebra 1 EOC	Geometry EOC	
Civics EOC	U.S. History EOC	
Annually: Grades 4–10 Writing prompts and individual student responses		

The purpose of the released tests is to promote transparency in the statewide, standardized assessment program and to increase the comfort level of students and parents with the state assessments. Students, parents, and teachers should use the released tests to better understand the types of items on Florida's K–12 statewide assessments.

Each released test will include content that represents an operational test blueprint for each respective assessment. The released tests can also be used to illustrate the length of an operational test and the range of difficulties of the questions on that test.

Each released test will include an answer key, the percentage of students that answered that item correctly, the item's reporting category, and the item benchmark information.

Released tests can be accessed through the Sample Items card on the Florida Statewide Assessments Portal.

For more information about K–12 assessments, please visit https://www.fldoe.org/accountability/assessments/k-12-student-assessment/.

For questions related to this document or released tests in general, please contact Assessment@fldoe.org.

1. Which expression is equivalent to $(x^4y^5)^3$?

Ⓐ $x^4y^{5 \cdot 3}$

Ⓑ x^4y^{5+3}

Ⓒ $x^{4 \cdot 3}y^{5 \cdot 3}$

Ⓓ $x^{4+3}y^{5+3}$

2. Which set of numbers could be possible side lengths, in units, of a right triangle?

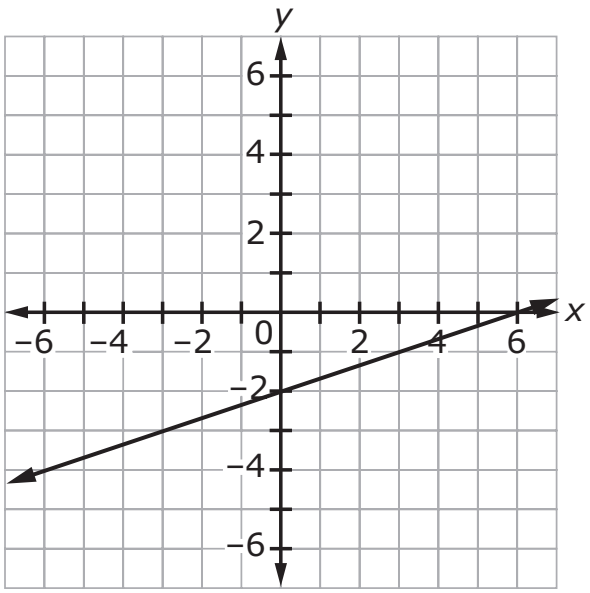
Ⓐ 3, 4, 5

Ⓑ 5, 5, 5

Ⓒ 5, 5, 7

Ⓓ 5, 8, 10

3. A graph of a line is shown.



What is the equation of the line?

Ⓐ $y = \frac{1}{3}x - 2$

Ⓑ $y = \frac{1}{3}x + 2$

Ⓒ $y = 3x - 2$

Ⓓ $y = 3x + 2$

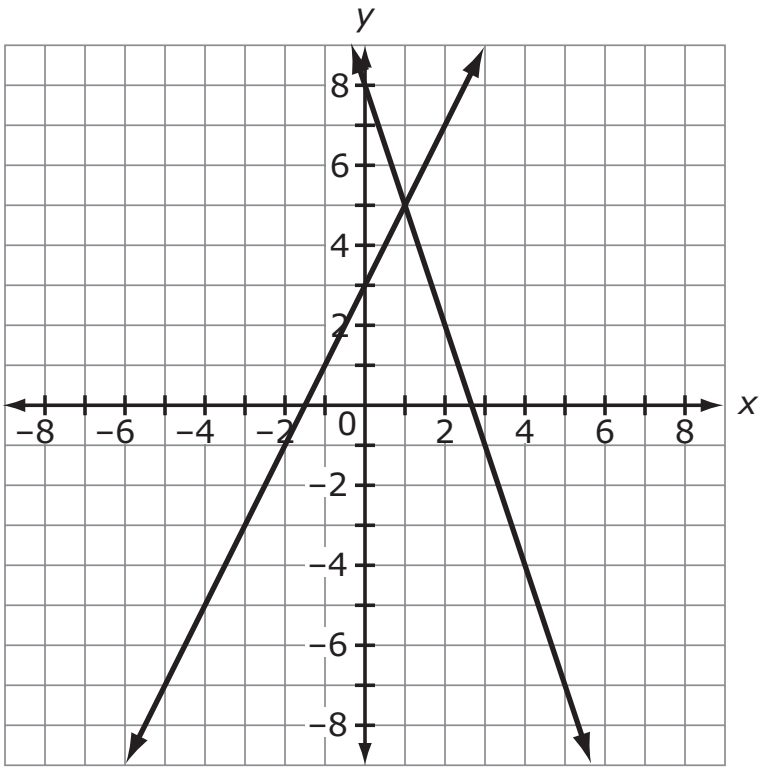
4. Three values are shown.

$$\sqrt[3]{9},\ \frac{\pi}{2},\ 2$$

Identify the least and greatest values.

	$\sqrt[3]{9}$	$\frac{\pi}{2}$	2
Least	Ⓐ	Ⓑ	Ⓒ
Greatest	Ⓓ	Ⓔ	Ⓕ

5. A system of equations is represented by the lines shown on the graph.



How many solutions does the system of equations have?

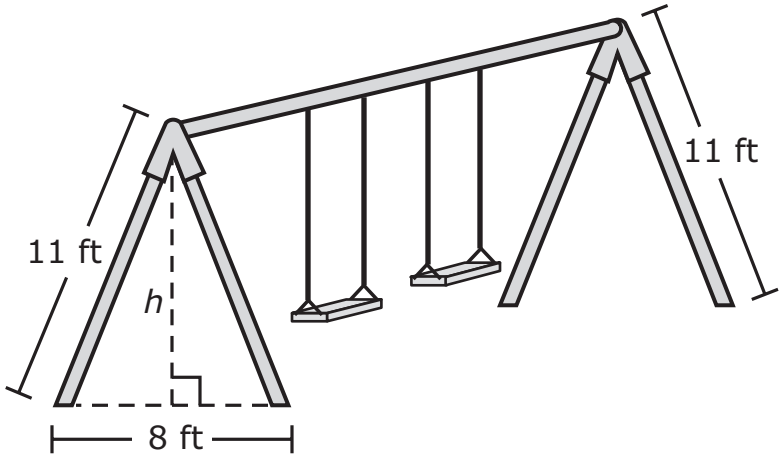
Ⓐ no solutions

Ⓑ one solution

Ⓒ two solutions

Ⓓ infinitely many solutions

6. A swing set is shown, with dimensions in feet (ft).



What is the height, h, of the swing set?

Ⓐ 57 ft

Ⓑ 105 ft

Ⓒ $\sqrt{57}$ ft

Ⓓ $\sqrt{105}$ ft

7. An expression is shown.

$$\sqrt{75 \div 3} + \left(\frac{1}{3}\right)^{-2}$$

What is the value of the expression?

8. Which expression is equivalent to $(7pq)(9p^5q)$?

Ⓐ $16p^5q$

Ⓑ $63p^5q$

Ⓒ $16p^6q^2$

Ⓓ $63p^6q^2$

9. The two figures shown are congruent.

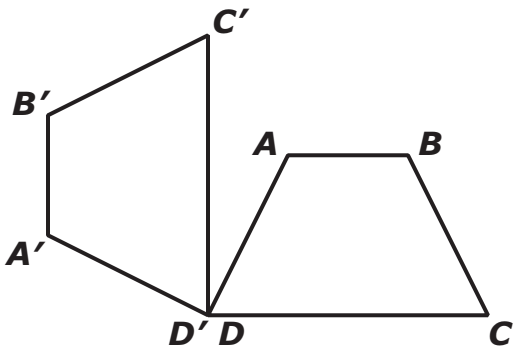


Figure *ABCD* is transformed to create figure *A′ B′ C′ D′*. Vertices *D* and *D′* are located on the same point.

Complete the sentence about the single transformation of figure *ABCD*.

Figure *ABCD* can be rotated [Ⓐ 90 Ⓑ 180 Ⓒ 270 Ⓓ 360] degrees [Ⓐ clockwise Ⓑ counterclockwise] about point *D* to create figure *A′ B′ C′ D′.*

10. Which value **best** approximates $-3 + \sqrt{68}$?

Ⓐ 5.2

Ⓑ 8.1

Ⓒ 8.4

Ⓓ 11.2

11. Select all the expressions with a value greater than 6.

Ⓐ 2π

Ⓑ $\sqrt{17}$

Ⓒ $\sqrt{40}$

Ⓓ $\sqrt[3]{100}$

Ⓔ $\sqrt[3]{350}$

12. Which table shows *y* as a function of *x*?

Ⓐ

x	1	2	3	4
y	5	8	8	14

Ⓑ

x	1	2	1	2
y	5	8	11	14

Ⓒ

x	2	2	3	4
y	5	8	8	14

Ⓓ

x	2	2	2	2
y	5	8	11	14

13. A fair coin is tossed twice.

What is the probability that the coin lands tails up both times?

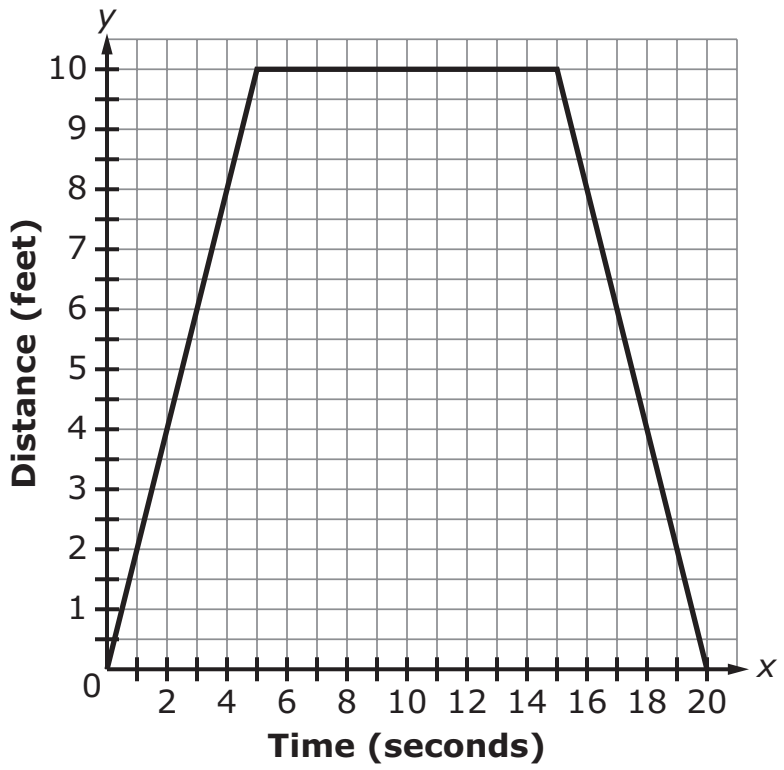
Ⓐ 25%

Ⓑ 33%

Ⓒ 50%

Ⓓ 75%

14. The graph shows the distance, y, in feet, that Mackenzie is from her home after walking for x seconds.



Identify whether Mackenzie's distance from home is constant, increasing, or decreasing over the given intervals.

	Constant	**Increasing**	**Decreasing**
from $x = 0$ to $x = 5$	Ⓐ	Ⓑ	Ⓒ
from $x = 5$ to $x = 15$	Ⓓ	Ⓔ	Ⓕ
from $x = 15$ to $x = 20$	Ⓖ	Ⓗ	Ⓘ

15. Which value is equivalent to 5^{-3}?

Ⓐ -125

Ⓑ $-\frac{1}{125}$

Ⓒ $\frac{1}{125}$

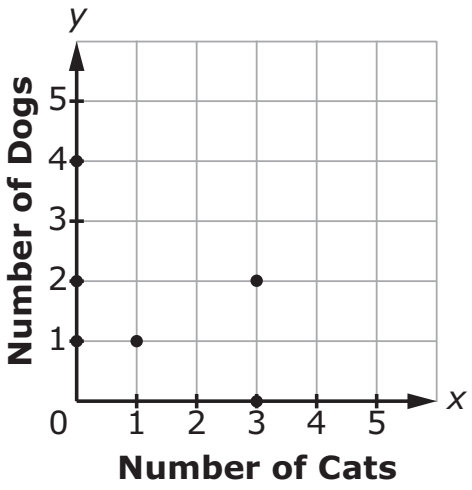
Ⓓ 125

16. The table shows the number of cats and dogs that six students have.

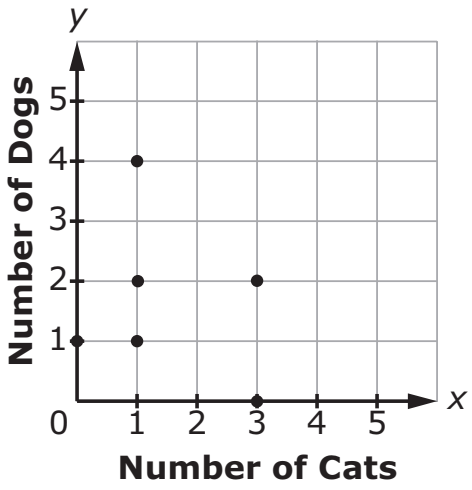
Number of Cats	Number of Dogs
0	1
0	2
0	4
1	1
3	0
3	2

Which scatter plot correctly displays the data?

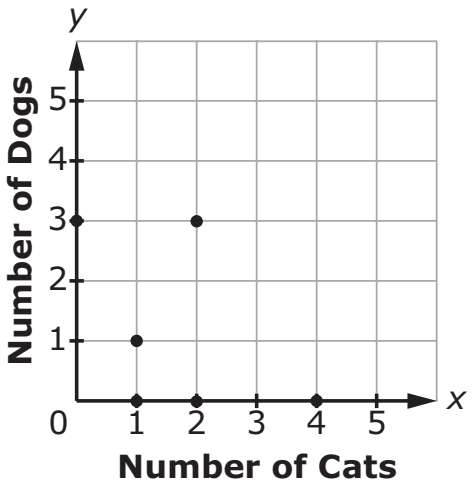
Ⓐ



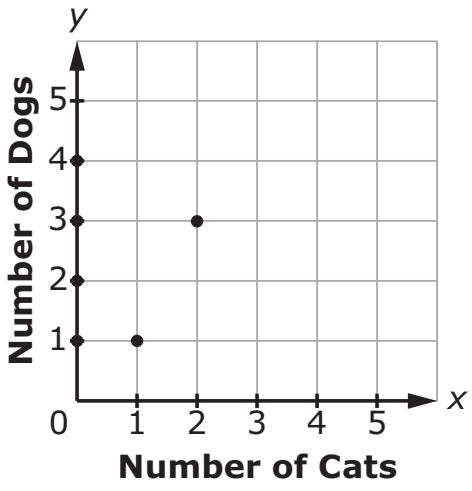
Ⓒ



Ⓑ



Ⓓ



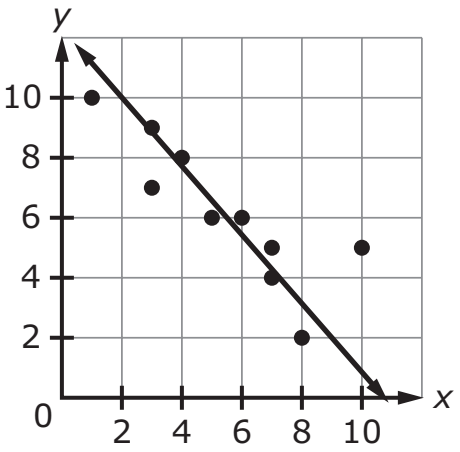
17. An equation is shown.

$$x^2 = 169$$

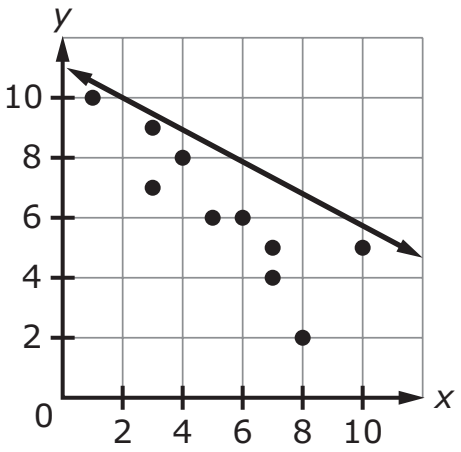
What is a value of x?

18. Which scatter plot shows a line that appropriately fits the data?

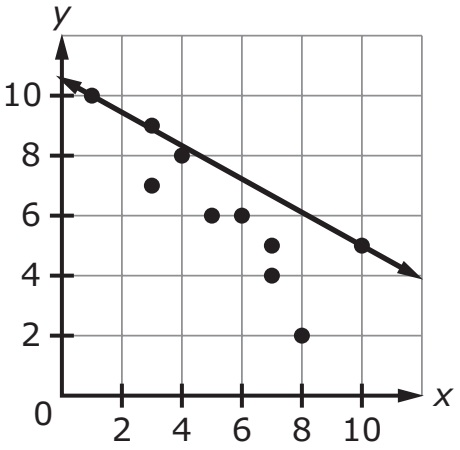
Ⓐ



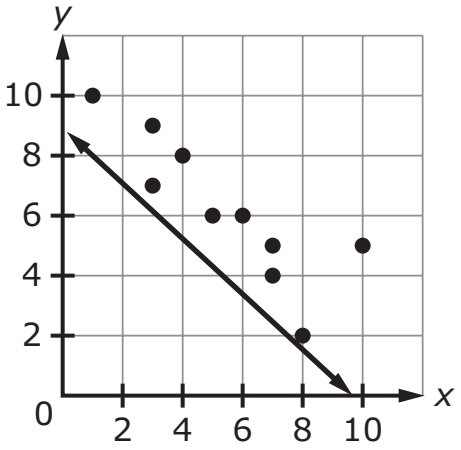
Ⓒ



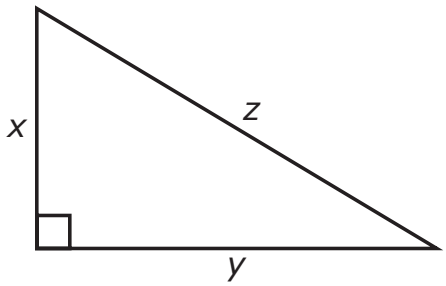
Ⓑ



Ⓓ



19. The right triangle shown has side lengths of x, y, and z units.



Which equation correctly relates the side lengths of the triangle?

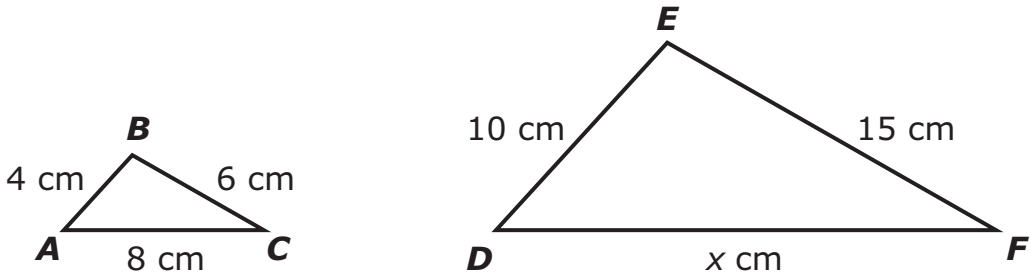
Ⓐ $x + y = z$

Ⓑ $2x + 2y = 2z$

Ⓒ $x^2 + y^2 = z^2$

Ⓓ $(x + y)^2 = z^2$

20. Triangle *ABC* is similar to triangle *DEF*. The sides of each triangle are measured in centimeters (cm), as shown.



Which equation can be used to find the value of *x*?

Ⓐ $\frac{4}{6}=\frac{8}{x}$

Ⓑ $\frac{4}{6}=\frac{10}{x}$

Ⓒ $\frac{6}{8}=\frac{15}{x}$

Ⓓ $\frac{6}{8}=\frac{x}{15}$

21. An expression is shown.

$$\frac{1}{4}\sqrt{5^2 + 39}$$

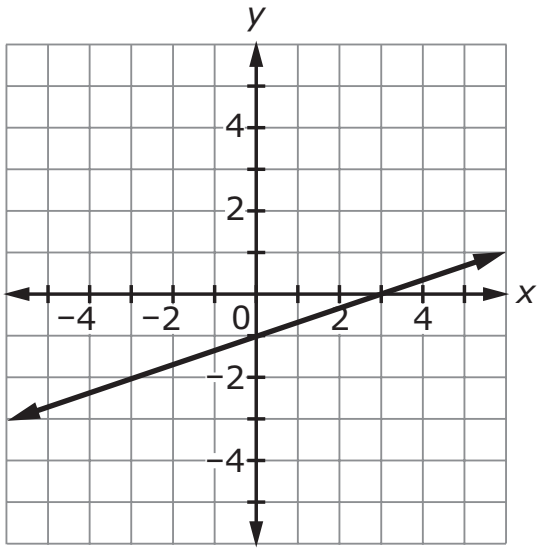
What is the value of the expression?

22. An equation is shown.

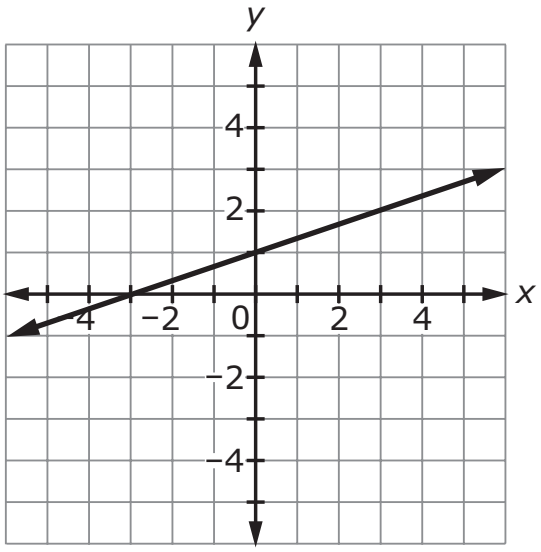
$$y = -\frac{1}{3}x - 1$$

Which graph represents this equation?

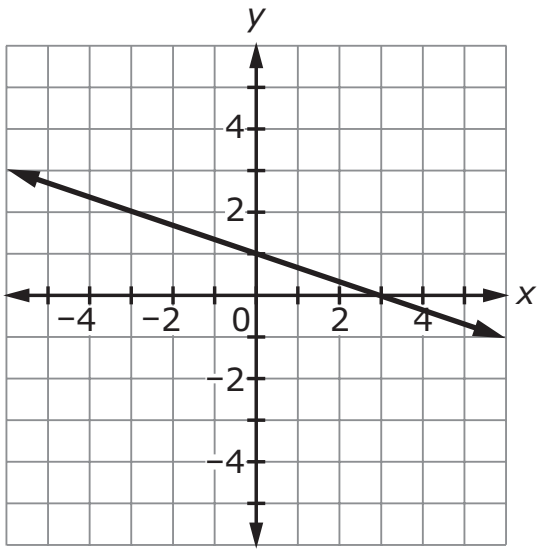
Ⓐ



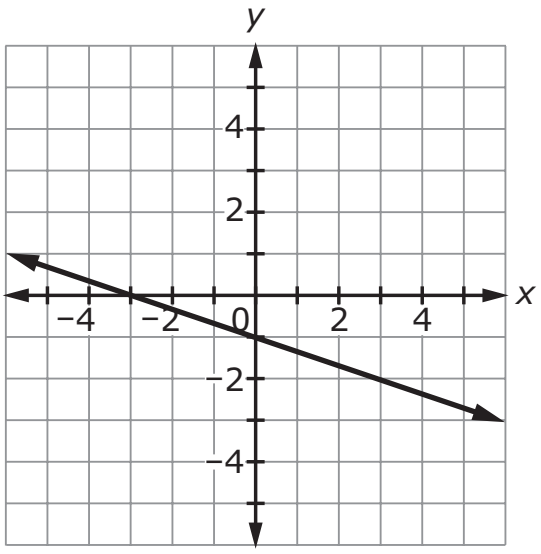
Ⓒ



Ⓑ

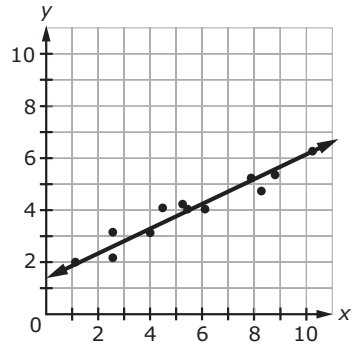


Ⓓ

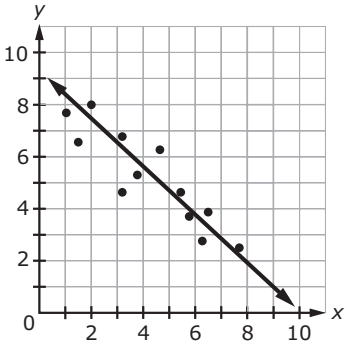


23. Select all the scatter plots that show a line that appropriately fits the data.

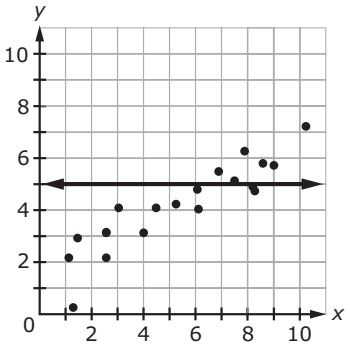
Ⓐ



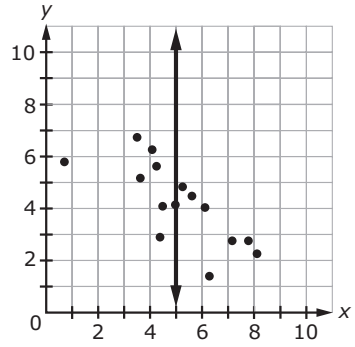
Ⓒ



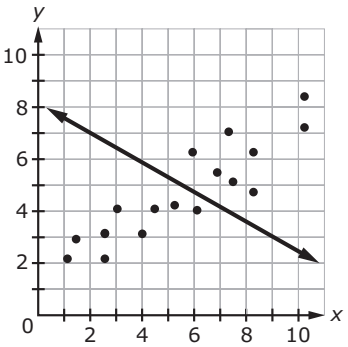
Ⓔ



Ⓑ



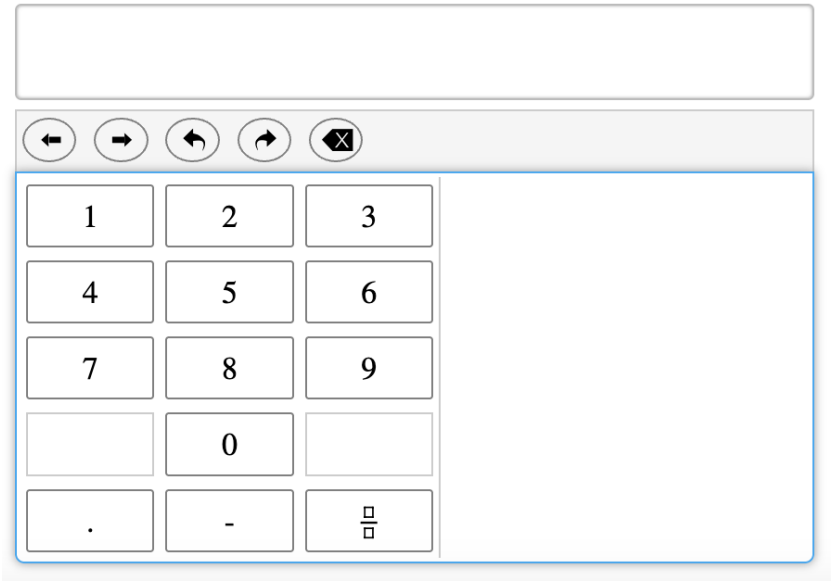
Ⓓ



24. Complete the equation to show the quotient in scientific notation.

$(8.4 \times 10^9) \div (2.4 \times 10^3) =$ ☐ $\times 10^{\square}$

$(8.4 \times 10^9) \div (2.4 \times 10^3) =$



$\times 10$

25. Charlie has a spinner with three equally sized sections. The sections are colored red (R), blue (B), and yellow (Y). He spins the spinner arrow 2 times.

What is the sample space for the experiment that has equally likely outcomes?

Ⓐ {R, B, Y}

Ⓑ {RR, RB, RY, BB, BY, YY}

Ⓒ {RB, RY, BR, BY, YR, YB}

Ⓓ {RR, RB, RY, BB, BR, BY, YY, YR, YB}

26. Some points on a line are shown in the table.

x	0	2	4
y	0	–2	–4

What is the slope of the line?

Ⓐ –2

Ⓑ –1

Ⓒ 0

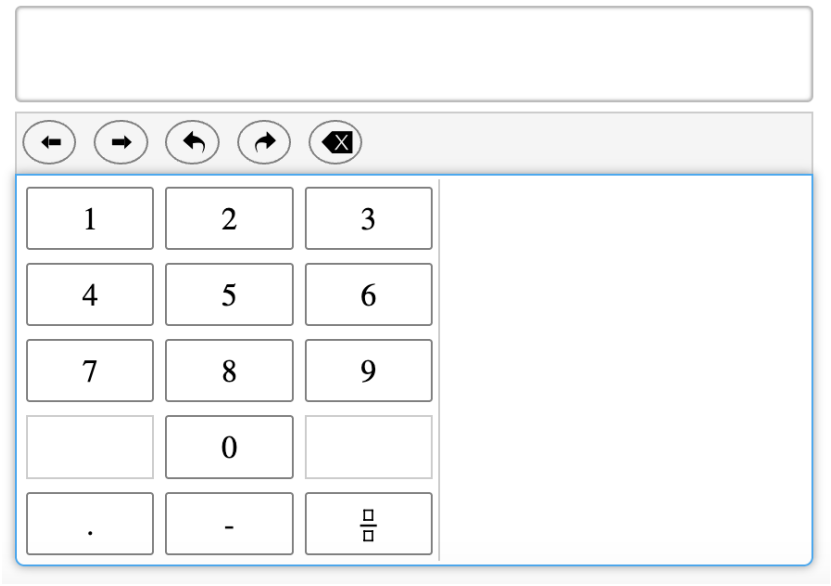
Ⓓ 1

27. What is the value of x in $x^3 = -125$?

$x =$

28. Two side lengths of a triangle are 15 inches and 3 inches.

What is a possible length, in inches, of the third side?



29. Select all the solutions to $x^3 = 64$.

Ⓐ -8

Ⓑ -4

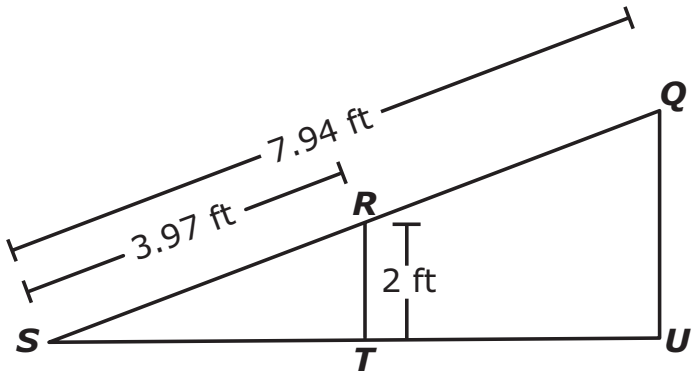
Ⓒ 4

Ⓓ 8

Ⓔ $\sqrt{64}$

Ⓕ $\sqrt[3]{64}$

30. Triangle *QSU* and triangle *RST* are similar. The triangles are shown with side lengths in feet (ft).



What is the length, in feet, of $\overline{QU}$?

31. Match the equivalent expressions.

	$3x^2$	$9x^4$
$\frac{3x^4}{x^2}$	Ⓐ	Ⓑ
$(3x^2)^2$	Ⓒ	Ⓓ
$\frac{9x^7}{3x^5}$	Ⓔ	Ⓕ

32. A game center has an entrance fee and a fixed cost per game. When Sal visits the game center, he models his total cost, y, to play x games with the equation shown.

$$y = 1.5x + 10$$

What does the slope represent in this situation?

Ⓐ the cost to play each game

Ⓑ the cost of the entrance fee

Ⓒ the total number of games played

Ⓓ the total cost to visit the game center

33. Which expression is equivalent to $(15.4 + 7p)(5.6p)$?

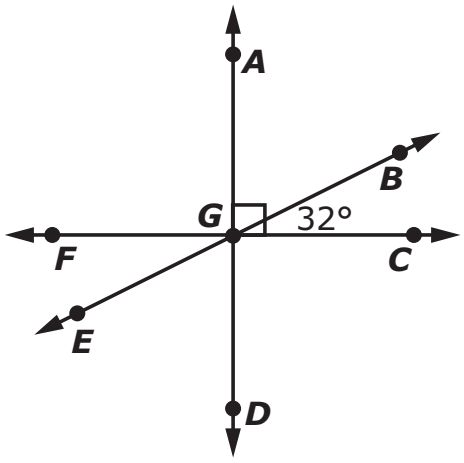
Ⓐ $15.4 + (7p)(5.6p)$

Ⓑ $(15.4)(5.6p) + 7p$

Ⓒ $(15.4)(5.6p) \times (7p)(5.6p)$

Ⓓ $(15.4)(5.6p) + (7p)(5.6p)$

34. A figure is shown with three lines passing through point *G*.



Match each angle to its measure.

	32º	**58º**	**90º**
∠ *AGB*	Ⓐ	Ⓑ	Ⓒ
∠ *FGE*	Ⓓ	Ⓔ	Ⓕ
∠ *AGF*	Ⓖ	Ⓗ	Ⓘ

35. An inequality is shown.

$$\frac{1}{6}x + \frac{1}{5} > \frac{8}{15}$$

What is the solution to the inequality?

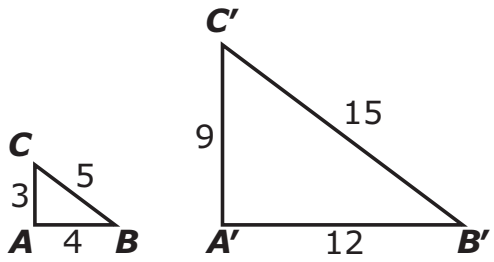
Ⓐ $x < 2$

Ⓑ $x > 2$

Ⓒ $x > \frac{1}{18}$

Ⓓ $x < \frac{1}{18}$

36. Triangle *ABC* is dilated to create triangle *A′ B′ C′.* The triangles, with side lengths in units, are shown.



What scale factor was used to dilate triangle *ABC*?

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Florida Department of Education, Tallahassee, Florida