Mississippi MAAP 2022 Grade 8 Math Practice

Exam Materials
Pages 2 - 49

Answer Key Materials
Pages 50 - 51

MISSISSIPPI
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Grade 8 Mathematics

Practice Test

Read each question or problem carefully. Then, answer the question or work the problem. Be sure to mark your response in this test book.

1. What is the solution to $x^3 = 64$?

Ⓐ 4

Ⓑ 8

Ⓒ 16

Ⓓ 21

2. Given: $\triangle DEF$ is located on the coordinate plane.
$\angle D$ measures 136°.

If the triangle is rotated 90° counterclockwise about the origin to form $\triangle D'E'F'$, what is the measure of $\angle D'$?

Ⓐ 46°

Ⓑ 90°

Ⓒ 136°

Ⓓ 226°

3. The table represents a company's digital music revenue for six years.

Year	Digital Music Revenue (billions of $)
2009	4.4
2010	4.7
2011	5.3
2012	6.0
2013	6.4
2014	6.9

Amy correctly made a scatter plot of the data in the table. Which statement is true based on her scatter plot?

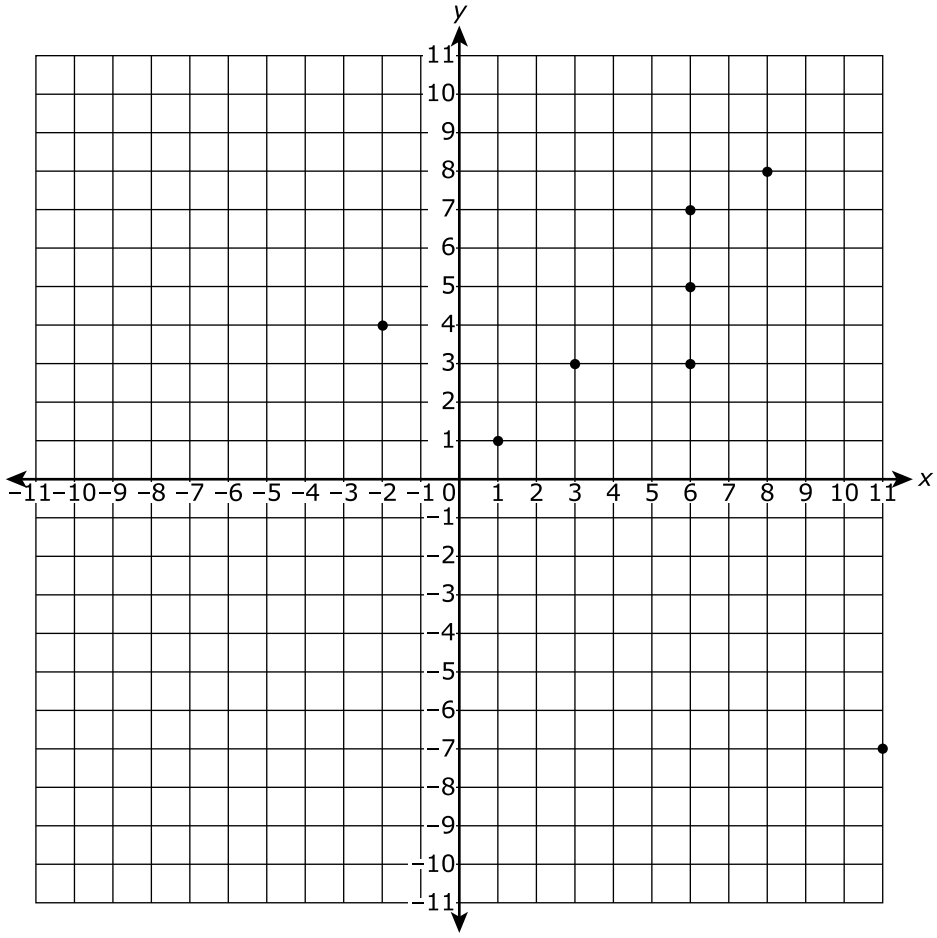
Ⓐ There is at least one outlier.

Ⓑ There is a nonlinear association.

Ⓒ There is a positive linear association.

Ⓓ There is a negative linear association.

4. Which ordered pairs should be removed to make the graph a function?



Ⓐ $(-2, 4)$ and $(11, -7)$

Ⓑ $(6, 5)$ and $(6, 7)$

Ⓒ $(3, 3)$ and $(6, 3)$

Ⓓ $(1, 1)$ and $(6, 7)$

5. Select the box in each row that identifies the number as rational or irrational.

	Rational	Irrational
$\frac{13}{90}$	○	○
$\sqrt{84}$	○	○
$\frac{4}{11}$	○	○
12π	○	○
$4.\overline{63}$	○	○

6. A nanometer can be expressed as 1×10^{-9} meters, and a millimeter can be expressed as 1×10^{-3} meters. How many times larger is a millimeter than a nanometer?

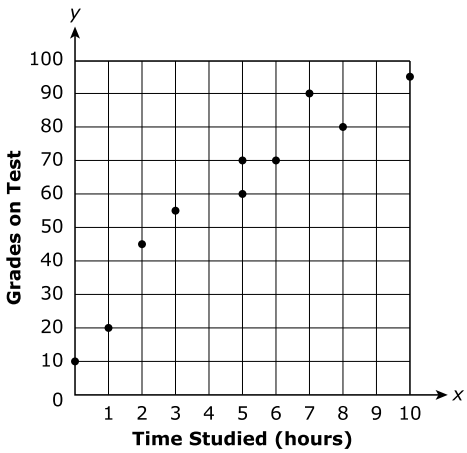
Ⓐ $10{,}000$

Ⓑ $100{,}000$

Ⓒ $1{,}000{,}000$

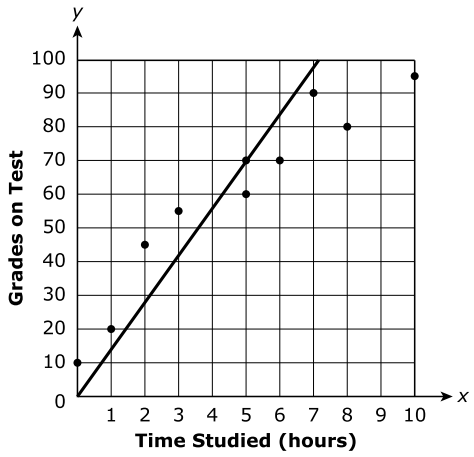
Ⓓ $10{,}000{,}000$

7. Ms. Downing created a scatter plot to show the relationship between the grades her students scored on a test and the number of hours each student studied.

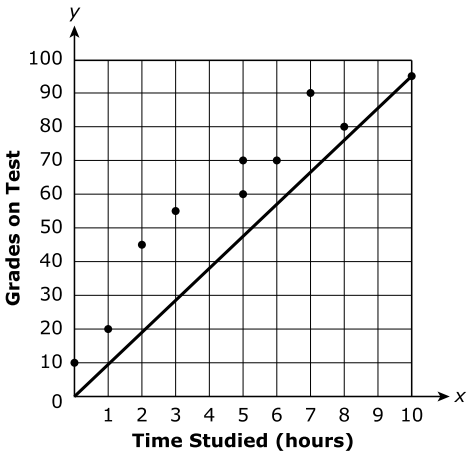


Which graph shows the **best** linear model of the data in the scatter plot?

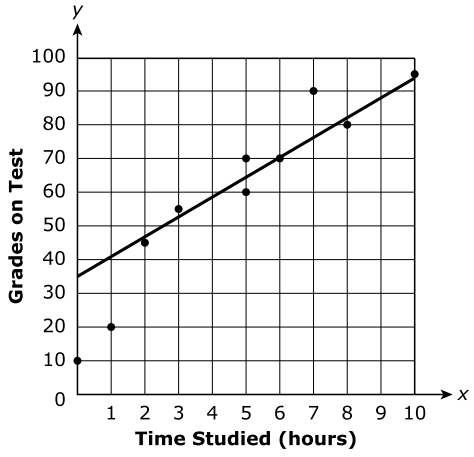
Ⓐ



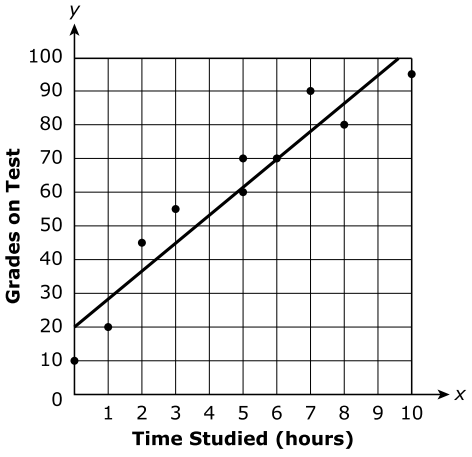
Ⓑ



Ⓒ



Ⓓ

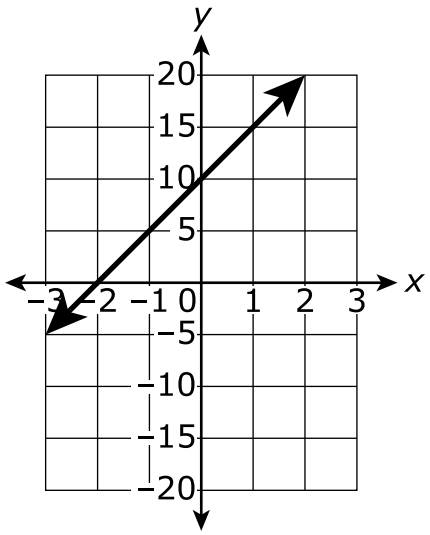


8. Two functions are shown.

Function A

x	*y*
−2	−7
−1	−3
0	1
1	5
2	9

Function B



For each statement, select the box that indicates which function is described.

	Function A	Function B
function with the greatest rate of change	○	○
function with the greatest initial value	○	○
function that produces an output value of 25 when the input value is 6	○	○

9. Company A sells 500 pencils for $\$62.50$. The equation $y = 0.25x$ represents the cost of buying x number of pencils from Company B. Which statement describes the relationship between the prices per pencil for Company A and Company B?

Ⓐ The price per pencil at Company B is one-third the price per pencil at Company A.

Ⓑ The price per pencil at Company B is one-half the price per pencil at Company A.

Ⓒ The price per pencil at Company B is twice the price per pencil at Company A.

Ⓓ The price per pencil at Company B is triple the price per pencil at Company A.

10. Select the box in each row that identifies the scientific notation that is equivalent to each expression.

	1.96×10^{6}	1.96×10^{5}	1.96×10^{2}	1.96×10^{-3}	1.96×10^{-5}
$0.014 \cdot (1.4 \times 10^{8})$	○	○	○	○	○
$0.014 \cdot (1.4 \times 10^{-1})$	○	○	○	○	○
$0.014 \cdot (1.4 \times 10^{-3})$	○	○	○	○	○
$(1.4 \times 10^{2}) \cdot (1.4 \times 10^{3})$	○	○	○	○	○
$(1.4 \times 10^{-2}) \cdot (1.4 \times 10^{4})$	○	○	○	○	○

11. A student's work to solve an equation is shown.

$$\begin{aligned} \tfrac{1}{8}(40x + 16) &= 9x - 7(2x - 1) - 5 \\ 5x + 2 &= 9x - 14x + 7 - 5 \\ 5x + 2 &= 5x + 2 \\ 2 &= 2 \end{aligned}$$

Which statement is true?

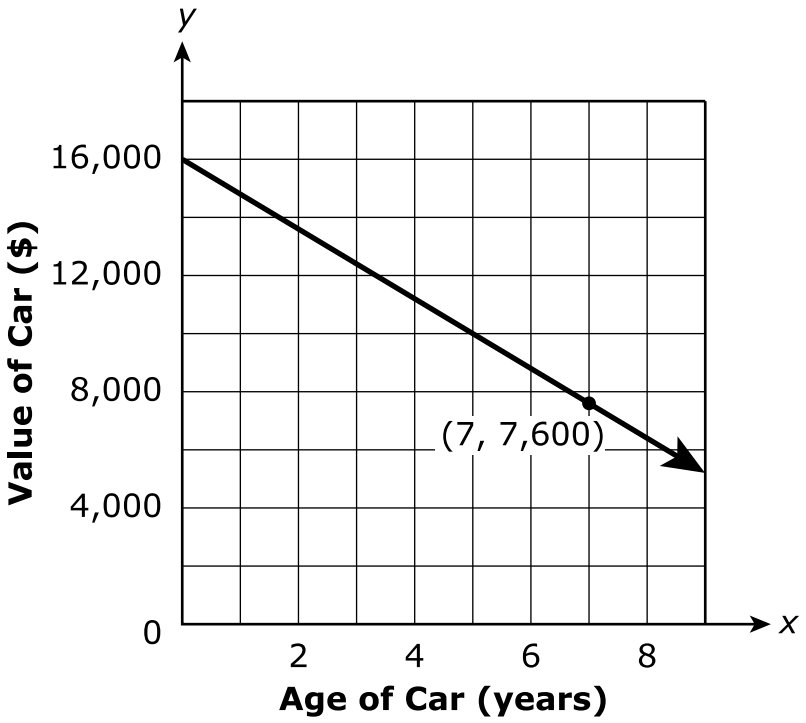
Ⓐ The student solved the equation correctly because the original equation has no solutions.

Ⓑ The student solved the equation correctly because the original equation has one solution.

Ⓒ The student solved the equation incorrectly because the original equation has one solution.

Ⓓ The student solved the equation incorrectly because the original equation has infinitely many solutions.

12. The graph shows the relationship between the value of a car, in dollars, after t years.



Which statements are true about the relationship?

Select **two** answer choices.

Ⓐ After 10 years, the car is worth $\$0$.

Ⓑ The value of the car increases by $\$1{,}200$ each year.

Ⓒ The value of the car decreases by $\$1{,}200$ each year.

Ⓓ The value of the car when it was brand-new was $\$16{,}000$.

Ⓔ The relationship can be modeled by the linear function $V = 1{,}200t + 16{,}000$.

13. A list of numbers is shown.

$7.6, \sqrt{50}, \sqrt{65}, \sqrt{78}, 8.2$

To plot the numbers on a number line, which list is ordered from **<u>least</u>** to **<u>greatest</u>**?

Ⓐ $\sqrt{50}, \sqrt{65}, \sqrt{78}, 7.6, 8.2$

Ⓑ $\sqrt{78}, 8.2, \sqrt{65}, 7.6, \sqrt{50}$

Ⓒ $7.6, 8.2, \sqrt{50}, \sqrt{65}, \sqrt{78}$

Ⓓ $\sqrt{50}, 7.6, \sqrt{65}, 8.2, \sqrt{78}$

14. One weekend, 156 students went to see a movie at the local theater. Their popcorn and drink purchases were recorded in the two-way table shown.

	Popcorn	No Popcorn	Total
Drink	56	67	123
No Drink	24	9	33
Total	80	76	156

What is the relative frequency, rounded to the nearest tenth of a percent, of students who purchased popcorn?

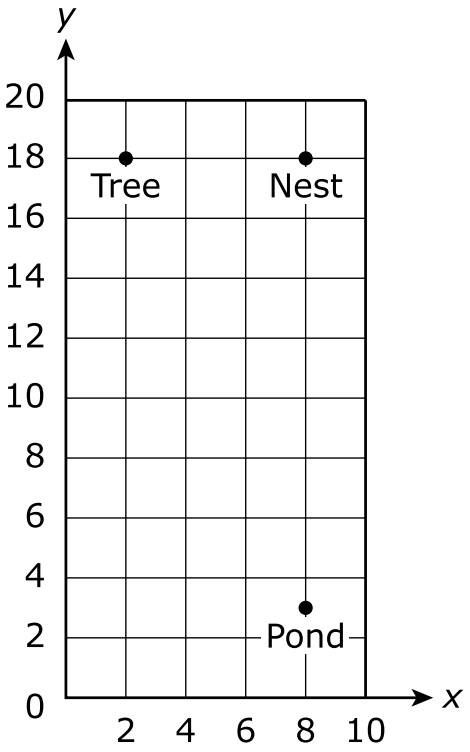
Ⓐ 27.6%

Ⓑ 35.9%

Ⓒ 42.9%

Ⓓ 51.3%

15. The graph shows the locations of an eagle's nest, a tree, and a pond. On the coordinate grid, each unit represents a mile.



Which distance **best** represents the shortest distance from the pond to the tree? Round to the nearest tenth of a mile.

Ⓐ 13.7 miles

Ⓑ 15.2 miles

Ⓒ 16.2 miles

Ⓓ 21.0 miles

16. The following question has two parts. First, answer Part A. Then, answer Part B.

JK Fitness Center offers two membership plans. The tables represent the monthly cost, in dollars, of each membership plan based on the number of visits to the fitness center.

Plan 1

Number of Visits	Cost ($)
1	27
2	29
3	31
4	33

Plan 2

Number of Visits	Cost ($)
1	41
2	42
3	43
4	44

Part A

At a certain number of visits, both plans will cost the same. At that number, how much will both plans cost, in dollars?

Write the answer in the box.

$ ☐

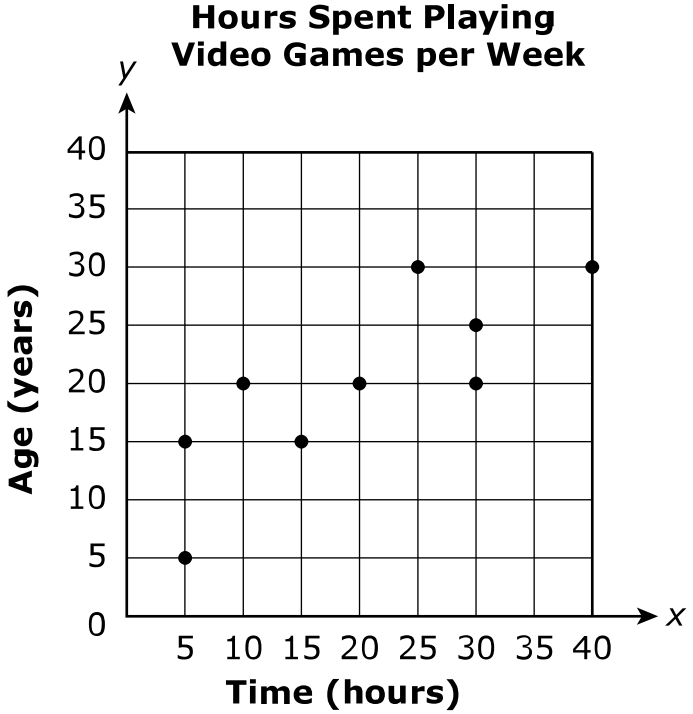
Part B

Which plan is more expensive at the tenth visit?

Write the number of the plan in the box.

Plan ☐

17. Nine people were surveyed to investigate the patterns of association between the time they spent playing video games and their ages. The data are shown in the scatter plot.



Which statements describe the pattern in the scatter plot?

Select **two** answer choices.

Ⓐ There is an outlier in the data.

Ⓑ There is clustering in the data.

Ⓒ There is a linear association in the data.

Ⓓ There is a positive association in the data.

Ⓔ There is a nonlinear association in the data.

18. Select the boxes that identify whether each equation is linear or not linear.

	Linear	Not Linear
$4 + y = 2x$	○	○
$x^2 + 8 = -x$	○	○
$2x^2 + x - 5 = 3x + 2x^2$	○	○
$y - 2 = 2(x - 5)$	○	○
$y = 2^x$	○	○

19. Tonya used side lengths a, b, and c to make different triangles. When Tonya only changed the length of side c, she noticed patterns with the side lengths used and the types of triangles formed. Which statement is true from Tonya's investigation?

Ⓐ If the length of side c is equal to $\sqrt{a^2 + b^2}$, the triangle formed is a right triangle.

Ⓑ If the length of side c is equal to $2a + 2b$, the triangle formed is a right triangle.

Ⓒ If the length of side c is equal to $\sqrt{a^2 - b^2}$, the triangle formed is a right triangle.

Ⓓ If the length of side c is equal to $2a - 2b$, the triangle formed is a right triangle.

20. In the table shown, x is the input and y is the output.

x	*y*
1	4
	5
5	4
7	3

For the table to represent a function, which values can be substituted for the missing x value?

Select **two** answer choices.

Ⓐ 1

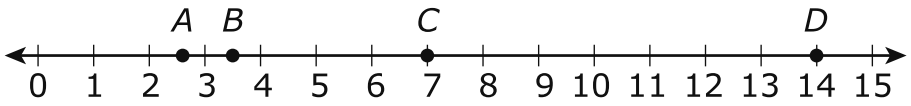
Ⓑ 2

Ⓒ 3

Ⓓ 5

Ⓔ 7

21. Which point shows the **approximate** location of $\sqrt{7}$ plotted on the number line?



Ⓐ A

Ⓑ B

Ⓒ C

Ⓓ D

22. Which expressions are equivalent to 4^{-4}?

Select **two** answer choices.

Ⓐ -16

Ⓑ $\frac{1}{256}$

Ⓒ -256

Ⓓ $4 \times 4 \times 4^{-6}$

Ⓔ $4 \times 4 \times 4 \times 4$

23. Austin uses a mold to make cone-shaped cupcakes. The diameter of the mold is 3 inches, and the height of the mold is 2 inches. If one cubic inch is about 0.55 ounces, how many ounces will 10 cupcakes weigh? Use 3.14 for π. Round to the nearest tenth of an ounce.

Write the answer in the box.

[ ] ounces

24. Ryan and Taylor are both saving money to buy new video game equipment. Ryan's savings plan can be modeled by the function $s = 15m + 50$, where m represents the number of months since Ryan started his plan and s represents the amount of money saved in dollars. The table shown represents Taylor's savings plan.

Taylor's Savings Plan

Number of Months	Amount Saved ($)
0	25
1	45
2	65
3	85

Based on this information, which statement is true?

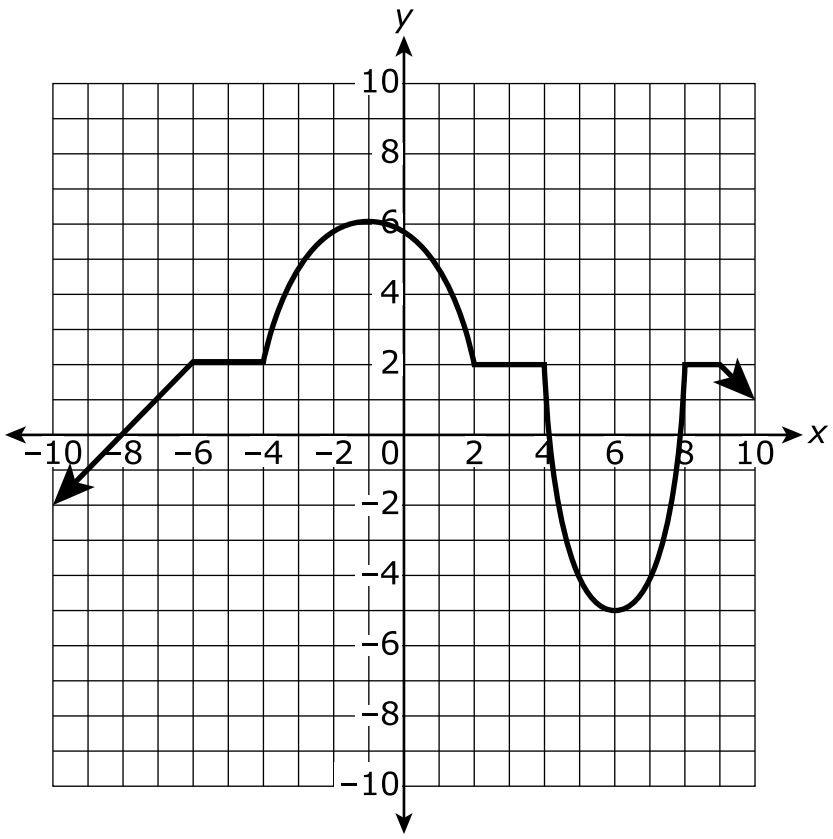
Ⓐ Ryan's initial savings is less than Taylor's initial savings.

Ⓑ Ryan's rate of change is less than Taylor's rate of change.

Ⓒ Ryan's initial savings is the same as Taylor's initial savings.

Ⓓ Ryan's rate of change is greater than Taylor's rate of change.

25. The graph of a function is shown on the coordinate plane.



Which statements are true?

Select **two** answer choices.

Ⓐ The function is linear between $x = 2$ and $x = 4$.

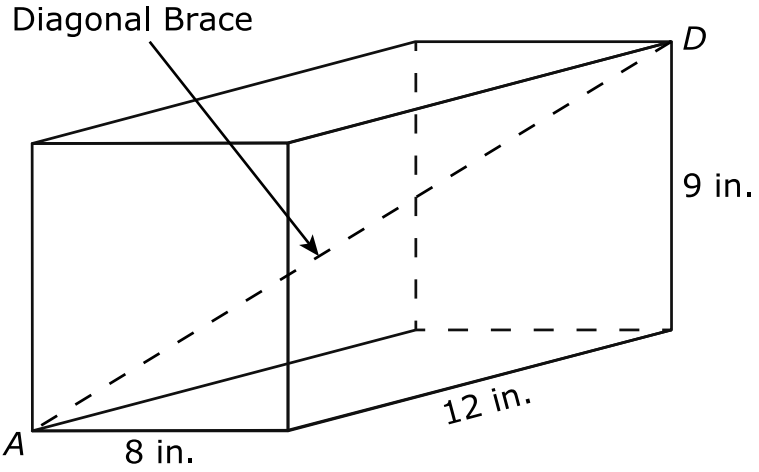
Ⓑ The function is linear between $x = 6$ and $x = 8$.

Ⓒ The function is decreasing between $x = -9$ and $x = -6$.

Ⓓ The function is increasing and linear between $x = -4$ and $x = -1$.

Ⓔ The function is decreasing and nonlinear between $x = -1$ and $x = 2$.

26. Jonathan is building a box in the shape of a rectangular prism with dimensions of 8 inches by 12 inches by 9 inches. He plans to place a diagonal brace inside the box from point A to point D. A diagram of his box is shown.



What is the length of the diagonal brace?

Ⓐ 12 inches

Ⓑ 14 inches

Ⓒ 15 inches

Ⓓ 17 inches

27. Given the equation $2(6x + 3) = 3(4x + 3)$, which statement is true?

Ⓐ The equation has no solutions.

Ⓑ The equation has a solution of 0.

Ⓒ The equation has a solution of 1.

Ⓓ The equation has infinitely many solutions.

28. The vertices of quadrilateral $ABCD$ are located at $(-7, 3)$, $(-7, 5)$, $(-5, 5)$, and $(-5, 3)$. Which coordinates are the vertices of image $A'B'C'D'$ after $ABCD$ has been rotated 270° counterclockwise about the origin?

Ⓐ $(-3, -7)$, $(-5, -7)$, $(-5, -5)$, $(-3, -5)$

Ⓑ $(7, -3)$, $(7, -5)$, $(5, -5)$, $(5, -3)$

Ⓒ $(7, 3)$, $(7, 5)$, $(5, 5)$, $(5, 3)$

Ⓓ $(3, 7)$, $(5, 7)$, $(5, 5)$, $(3, 5)$

29. Two parallel lines are graphed on a coordinate plane. Line 1 contains the points $A(1, 2)$ and $B(4, 5)$. Line 2 contains the points $C(2, 1)$ and $D(5, 4)$.

After each transformation, in what quadrant will the points A', B', C', and D' be located, and will image $A'B'$ be parallel to image $C'D'$?

Select the appropriate boxes in the table.

	I	II	III	IV	Parallel	Not Parallel
reflecting over the x-axis	○	○	○	○	○	○
reflecting over the y-axis	○	○	○	○	○	○
translating 4 units up	○	○	○	○	○	○
rotating 90 degrees clockwise about the origin	○	○	○	○	○	○
rotating 180 degrees counterclockwise about the origin	○	○	○	○	○	○

30. The equation $y = 1.26x + 9.49$ models the approximate height of a plant, in centimeters, after x weeks. Which statements are true about the linear model?

Select **two** answer choices.

Ⓐ The plant grows a total of 1.26 centimeters.

Ⓑ The initial height of the plant is 1.26 centimeters.

Ⓒ The initial height of the plant is 9.49 centimeters.

Ⓓ The plant grows about 1.26 centimeters each week.

Ⓔ The plant grows about 9.49 centimeters each week.

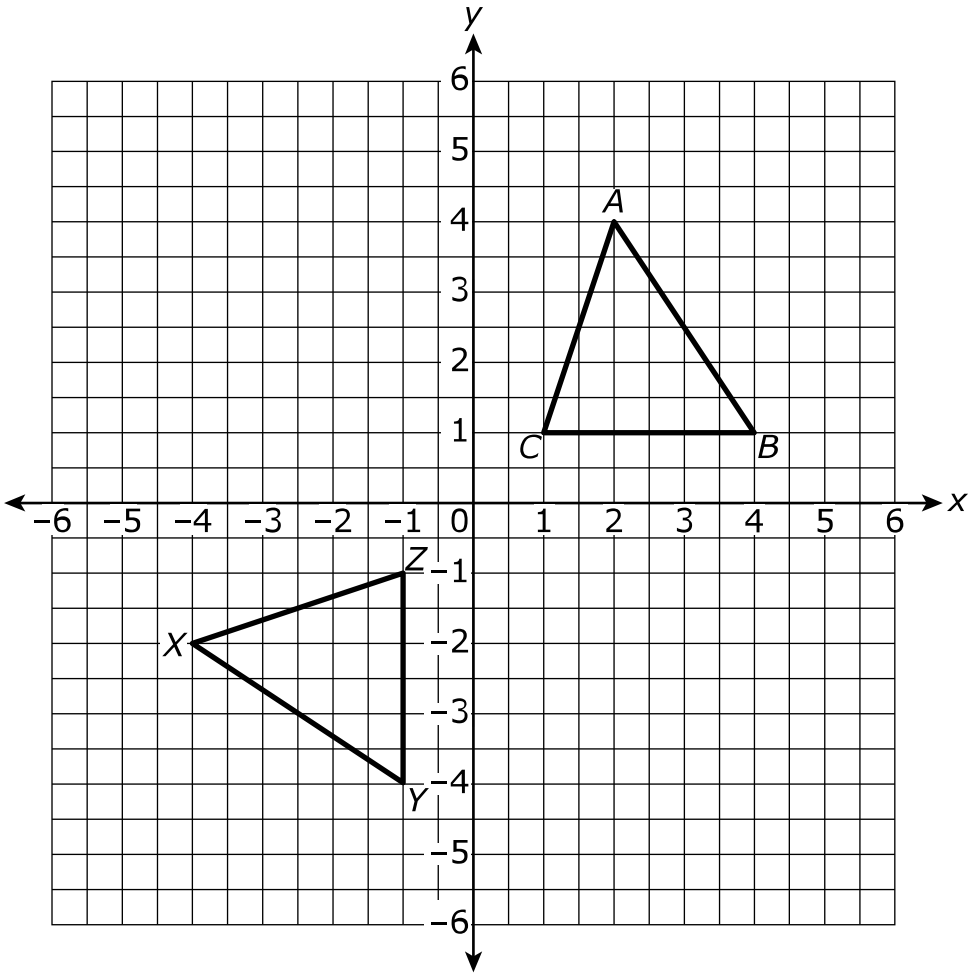
31. The table shows the amount of money, in dollars, Tasha has after purchasing a certain number of songs. Each song costs the same amount.

Number of Songs	Amount of Money Tasha Has ($)
2	27.60
3	26.40
4	25.20

Fill in the blanks with the values that correctly complete the statement.

According to the table, Tasha initially had $\$$ ____ before purchasing songs, and the cost of each song was $\$$ ____ .

32. Alice drew two triangles on the coordinate plane as shown.



Which series of transformations proves the two triangles are congruent?

Ⓐ Reflect triangle ABC across the x-axis, followed by a translation 5 units left.

Ⓑ Reflect triangle ABC across the x-axis, followed by a reflection over the y-axis.

Ⓒ Rotate triangle ABC 180 degrees counterclockwise with the center of rotation at point $(0, 0)$, followed by a translation 2 units down.

Ⓓ Rotate triangle ABC 90 degrees counterclockwise with the center of rotation at point $(0, 0)$, followed by a reflection across the x-axis.

33. Which values are irrational?

Select **two** answer choices.

Ⓐ -4π

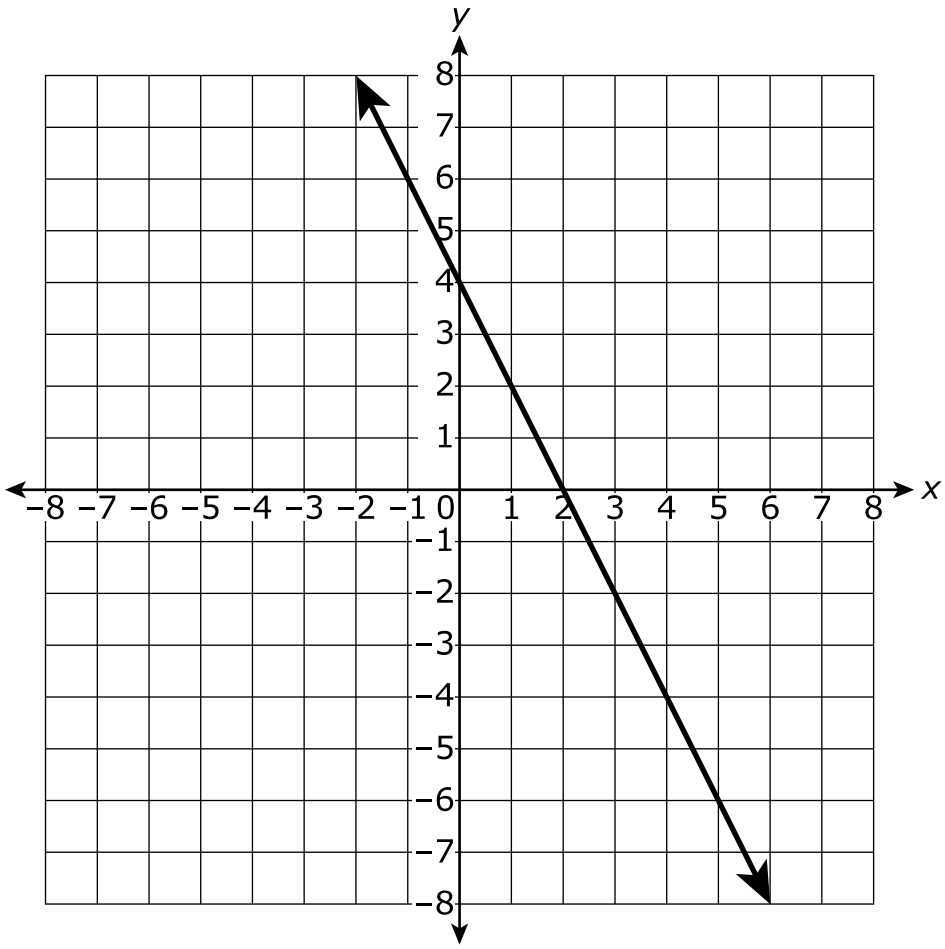
Ⓑ $-5.56\overline{45}$

Ⓒ $-\frac{1}{3}$

Ⓓ $\sqrt{2}$

Ⓔ 2.2578

34. A linear equation is graphed on the coordinate plane shown.



When graphed on the same coordinate plane, which equation results in a system of equations with exactly one solution?

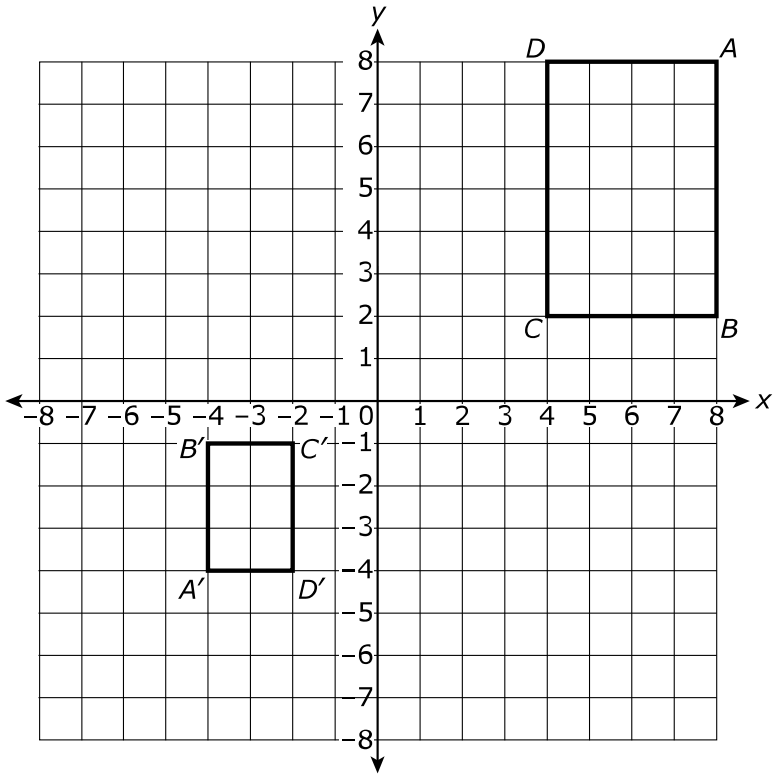
Ⓐ $-2x - y = -4$

Ⓑ $6x + 6y = 18$

Ⓒ $6x + 3y = 12$

Ⓓ $2x + y = 5$

35. Rectangles $ABCD$ and $A'B'C'D'$ are shown on the coordinate plane.



Which statement describes a sequence of transformations that can be used to verify that rectangle $A'B'C'D'$ is similar to rectangle $ABCD$?

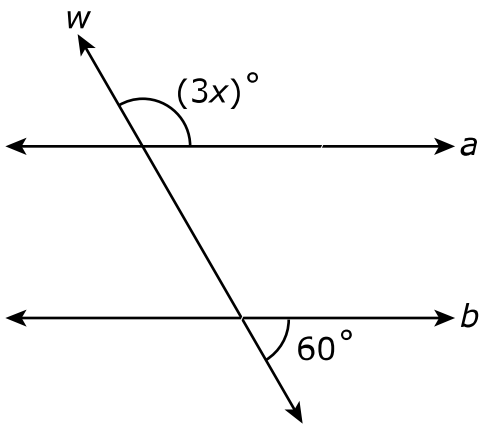
Ⓐ Dilate rectangle $ABCD$ with a scale factor of $\frac{1}{2}$ about the origin, followed by a translation 5 units down and 7 units left.

Ⓑ Dilate rectangle $ABCD$ with a scale factor of 2 about the origin, followed by a $180°$ rotation counterclockwise about the origin.

Ⓒ Dilate rectangle $ABCD$ with a scale factor of $\frac{1}{2}$ about the origin, followed by a $180°$ rotation counterclockwise about the origin.

Ⓓ Dilate rectangle $ABCD$ with a scale factor of 2 about the origin, followed by a translation 5 units down and 7 units left.

36. Two parallel lines, a and b, are cut by transversal w. The measures of two angles formed are given in the diagram.



What is the measure of the angle labeled $(3x)^\circ$?

Ⓐ 20°

Ⓑ 40°

Ⓒ 60°

Ⓓ 120°

37. Which functions are nonlinear?

Select **two** answer choices.

Ⓐ $y = -3x$

Ⓑ $y = 6x^2$

Ⓒ $y = x - 2$

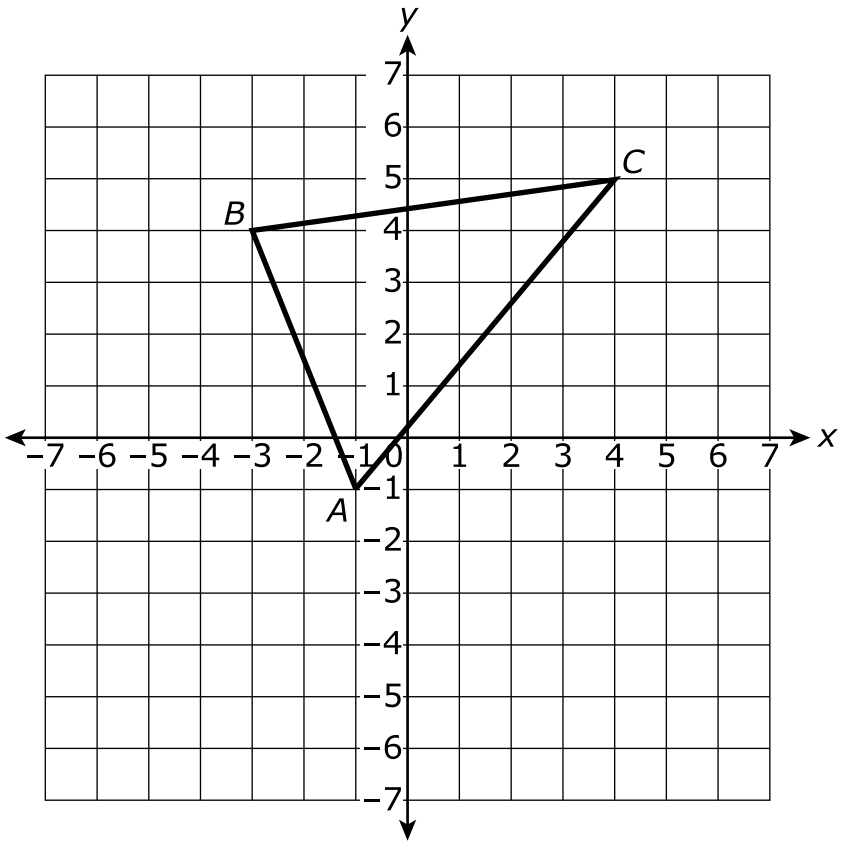
Ⓓ $y = \frac{1}{x} + 4$

Ⓔ $y = 4x + 5$

38. Select the boxes to identify whether the solutions for x are less than 5, equal to 5, or greater than 5.

	Less than 5	Equal to 5	Greater than 5
$x^3 = 15$	○	○	○
$x^2 = 25$	○	○	○
$x^3 = 36$	○	○	○
$x^3 = 49$	○	○	○
$x^2 = 50$	○	○	○
$x^3 = 125$	○	○	○

39. Triangle ABC is given.



Triangle ABC is rotated $90°$ clockwise around the origin, resulting in $\triangle A'B'C'$. What are the coordinates of B'?

Ⓐ $(-4, -3)$

Ⓑ $(-3, -4)$

Ⓒ $(3, 4)$

Ⓓ $(4, 3)$

40. Which decimal is equivalent to $\frac{8}{99}$?

Ⓐ 0.080

Ⓑ $0.\overline{08}$

Ⓒ 0.08

Ⓓ $0.\overline{8}$

41. Which statement describes the solution(s) to the system of equations $-6x - 3y = 12$ and $-12x - 6y = -24$?

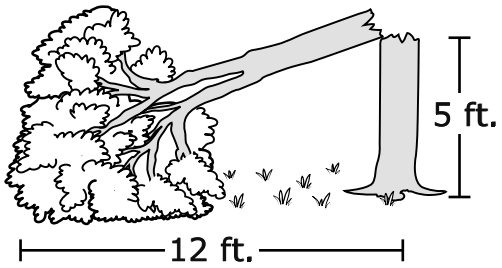
Ⓐ The system has no solution.

Ⓑ The system has a solution of $(3, -2)$.

Ⓒ The system has a solution of $(-2, -1)$.

Ⓓ The system has infinitely many solutions.

42. The top of a tree broke and fell over. The remaining tree trunk is 5 feet tall. The tip of the tree rests on the ground 12 feet from the base of the trunk. A diagram of the tree is shown.

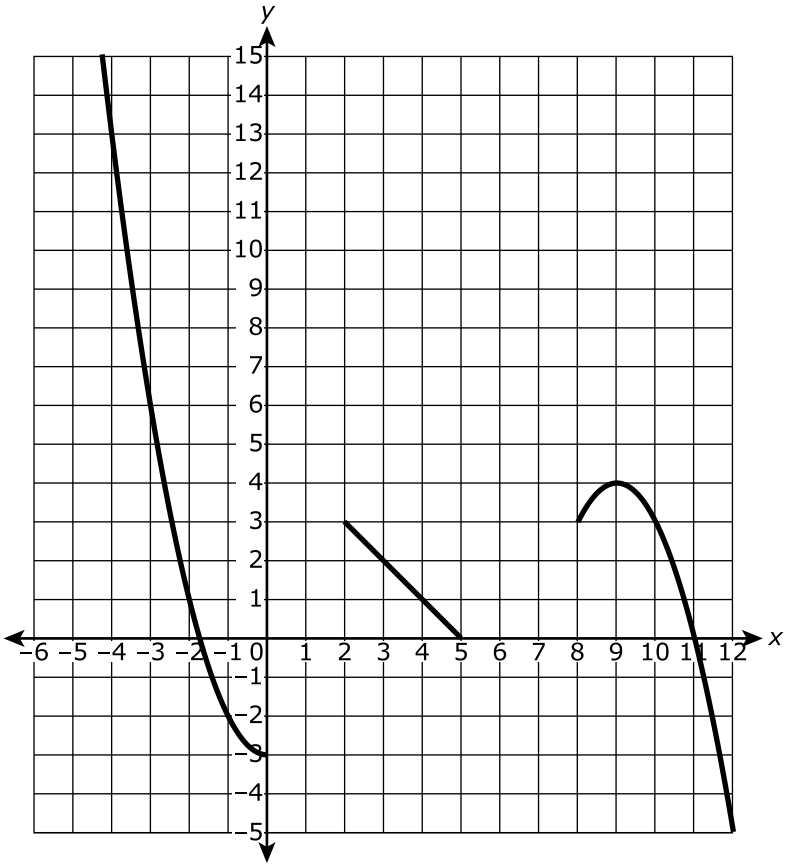


What is the length of the broken piece of the tree?

Fill in the blank with the value that correctly completes the statement.

The length of the broken piece of the tree is ☐ feet.

43. Which set of ordered pairs can be plotted on the graph so that the graph continues to represent a function?



Ⓐ $(-3, 2), (-2, 5), (4, 5)$

Ⓑ $(0, 0), (2, 0), (8, 0)$

Ⓒ $(1, 1), (3, 4), (6, 2)$

Ⓓ $(1, 1), (6, 1), (7, 1)$

44. A cylinder and a cone are stacked on top of each other. They both have 2-foot diameters and heights of 9 feet. What is the combined volume, in cubic feet? Use 3.14 for π.

Ⓐ 37.68 ft.^{3}

Ⓑ 75.36 ft.^{3}

Ⓒ 150.72 ft.^{3}

Ⓓ 678.24 ft.^{3}

45. Andre has $\$44$. He must save at least $\$120$ plus 7% sales tax to buy an electronic tablet. If he saves half the $\$15$ he makes each week, after how many weeks will he have enough money to buy the tablet?

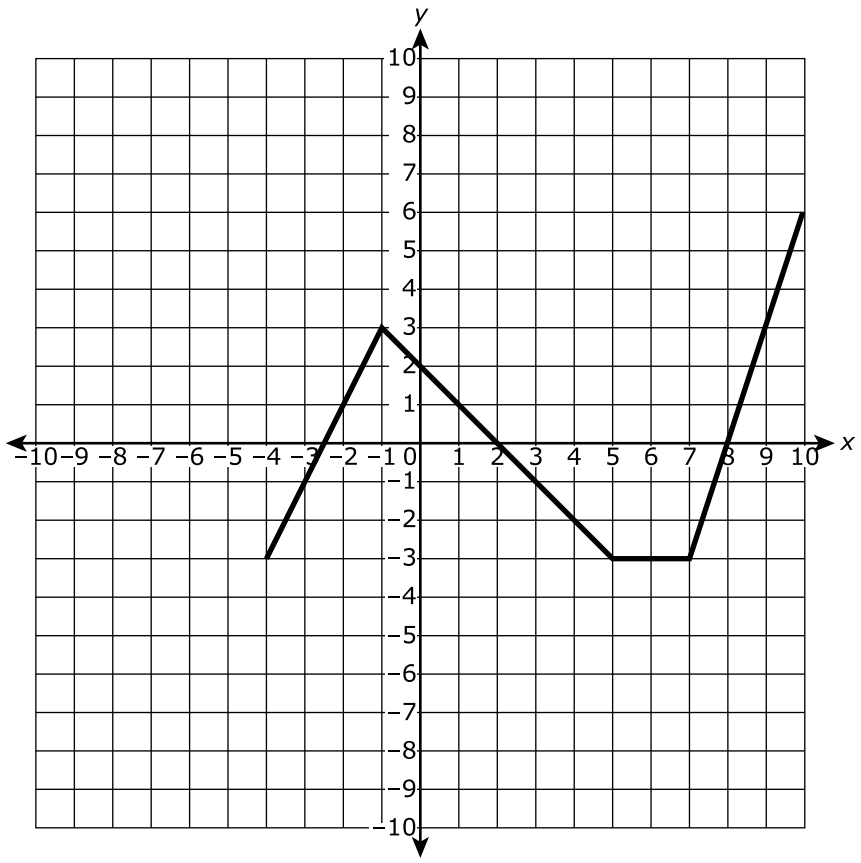
Ⓐ 5 weeks

Ⓑ 6 weeks

Ⓒ 11 weeks

Ⓓ 12 weeks

46. A graph is shown.



Based on the graph, which statement is true?

Ⓐ The function is decreasing when $-4 < x < -1$, and the function is increasing when $-1 < x < 5$.

Ⓑ The function is increasing when $-4 < x < -1$, and the function is decreasing when $-1 < x < 5$.

Ⓒ The function is increasing when $-4 < x < -1$, and the function is neither increasing nor decreasing when $-1 < x < 5$.

Ⓓ The function is neither increasing nor decreasing when $-4 < x < -1$, and the function is neither increasing nor decreasing when $-1 < x < 5$.

47. Select the box in each row that identifies the equation as true or false.

	True	False
$(2^5)^2 \cdot 2^0 = 2^5 \cdot 2^5 \cdot 0$	○	○
$(2^2)^3 \cdot 2^{-1} = 2^6 \cdot \frac{1}{2}$	○	○
$2^{-9} \cdot 2^3 \cdot \frac{1}{2^4} = \frac{1}{2^{10}}$	○	○
$2 \cdot \frac{1}{2^9} \cdot 2^2 = 2^{(1+9+2)}$	○	○
$(2^3)^4 = 2^7$	○	○

48. A triangle is formed with side lengths of 24 centimeters, 26 centimeters, and 10 centimeters. Is the triangle a right triangle?

Ⓐ The triangle is a right triangle because $24^2 + 10^2 = 26^2$.

Ⓑ The triangle is a right triangle because $2\,(24) + 2\,(26) = 2\,(10)$.

Ⓒ The triangle is not a right triangle because $10^2 + 26^2 = 24^2$.

Ⓓ The triangle is not a right triangle because $24^2 - 26^2 = 10^2$.

49. Shannon and Anna went shopping for shirts. Shannon's purchases are shown in the table, and Anna's purchases are modeled by the equation shown.

Shannon

Number of Shirts	Total Cost ($)
2	13.50
3	20.25
4	27.00
5	33.75

Anna

$C = 7.50n$

n represents the number of shirts

C represents the cost in dollars

Based on this information, which statement is true?

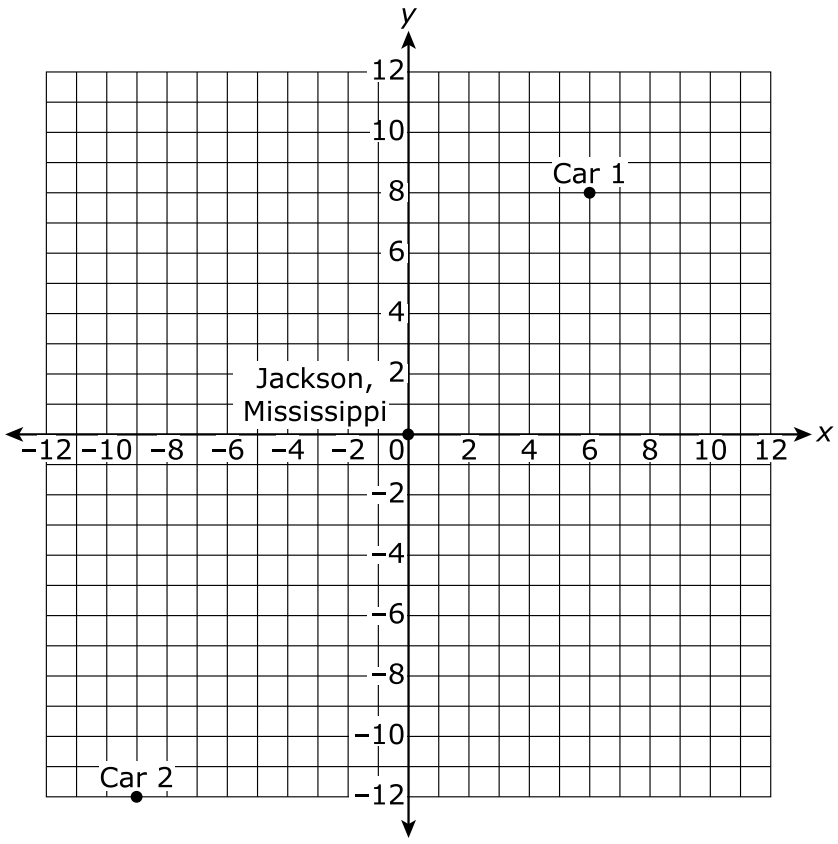
Ⓐ Anna found the better buy because the shirts cost $\$6.75$ less.

Ⓑ Anna found the better buy because the shirts cost $\$7.50$ less.

Ⓒ Shannon found the better buy because the shirts cost $\$0.75$ less.

Ⓓ Shannon found the better buy because the shirts cost $\$1.25$ less.

50. Two cars leave Jackson, Mississippi. One travels 8 miles north and then 6 miles east. The second car travels 12 miles south and 9 miles west. The location of each car is shown on the graph.



What is the distance, in miles, between the cars?

Ⓐ 15 miles

Ⓑ 20 miles

Ⓒ 25 miles

Ⓓ 35 miles

51. Which expressions are equivalent to the expression shown?

4^6

Select **three** answer choices.

Ⓐ $2^3 \cdot 2^3$

Ⓑ $\left(2^2\right)^4\left(2^2\right)^4$

Ⓒ $4^3 \cdot 4^3$

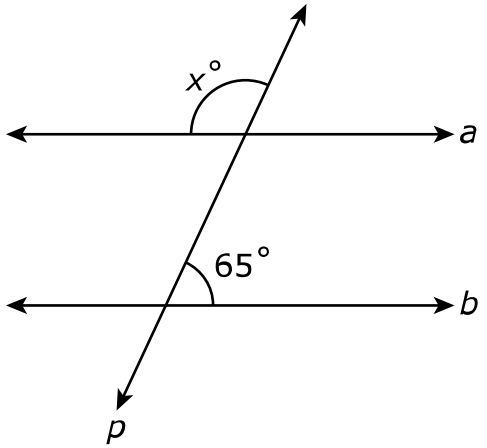
Ⓓ $\left(4^2\right)^3$

Ⓔ $\left(4^3\right)^3$

Ⓕ $\frac{4^{12}}{4^6}$

Ⓖ $\frac{4^6}{4^{12}}$

52. Two parallel lines, a and b, are cut by transversal p.



What is the measure of $\angle x$?

Ⓐ 65°

Ⓑ 75°

Ⓒ 105°

Ⓓ 115°

53. The mass of Earth is 5.972×10^{24} kilograms, and the mass of Venus is 4.867×10^{24} kilograms.

Which mass is closest to the difference between the mass of Earth and the mass of Venus?

Ⓐ 1.227×10^{0} kg

Ⓑ 1.227×10^{24} kg

Ⓒ 1.105×10^{0} kg

Ⓓ 1.105×10^{24} kg

54. Which equations represent linear functions?

Select **two** answer choices.

Ⓐ $y = x^2$

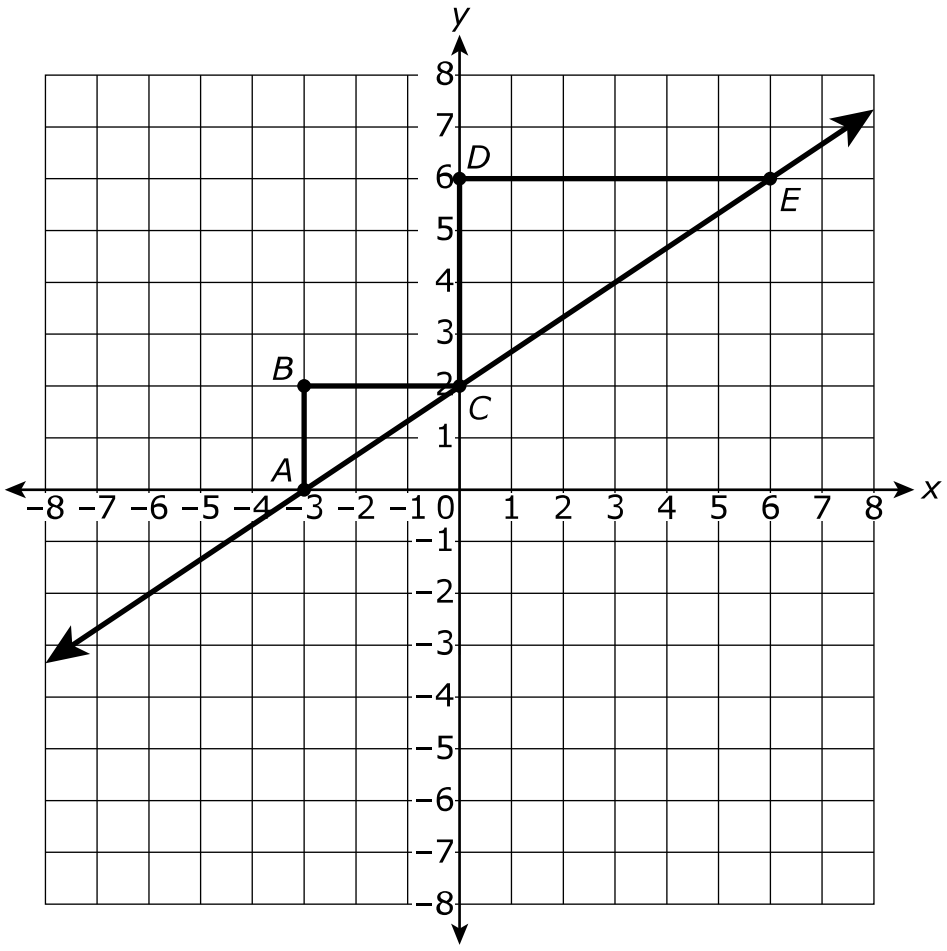
Ⓑ $-x = y$

Ⓒ $y = \frac{1}{4}x^2 + 4$

Ⓓ $6x - 3y = 12$

Ⓔ $y = -2x^2 + 1$

55. Triangles ABC and CDE are shown on the coordinate plane.



Which proportion demonstrates that the slope of $\overline{AC}$ is equal to the slope of $\overline{CE}$?

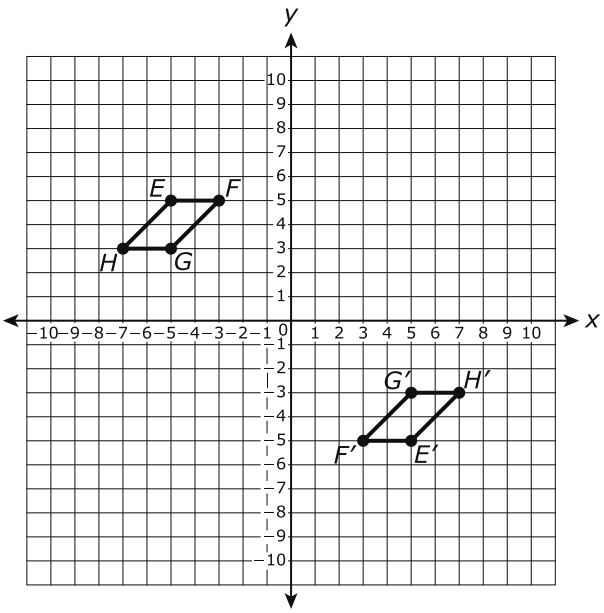
Ⓐ $\frac{AB}{BC} = \frac{CD}{DE}$

Ⓑ $\frac{AB}{AC} = \frac{CD}{CE}$

Ⓒ $\frac{BC}{CE} = \frac{DE}{AC}$

Ⓓ $\frac{AB}{BC} = \frac{DE}{CD}$

56. Parallelogram $EFGH$ and parallelogram $E'F'G'H'$ are graphed on the coordinate plane.



Select the boxes to indicate the sequence of transformations that show that $E'F'G'H'$ is congruent to $EFGH$.

	Shows $EFGH$ maps to $E'F'G'H'$	Does not show $EFGH$ maps to $E'F'G'H'$
Parallelogram $EFGH$ is rotated $180°$ clockwise around the origin.	○	○
Parallelogram $EFGH$ is reflected over the y-axis and translated 8 units down.	○	○
Parallelogram $EFGH$ is reflected over the x-axis and then reflected over the y-axis.	○	○
Parallelogram $EFGH$ is translated 10 units right and 8 units down.	○	○

57. The diagonal distance across the United States measures approximately 3×10^3 miles. The distance from the North Pole to the South Pole measures approximately 1×10^4 miles. Which statement is true?

Ⓐ The distance from the North Pole to the South Pole measures approximately one times as many miles as the diagonal distance across the United States.

Ⓑ The distance from the North Pole to the South Pole measures approximately three times as many miles as the diagonal distance across the United States.

Ⓒ The distance from the North Pole to the South Pole measures approximately 3×10^1 times as many miles as the diagonal distance across the United States.

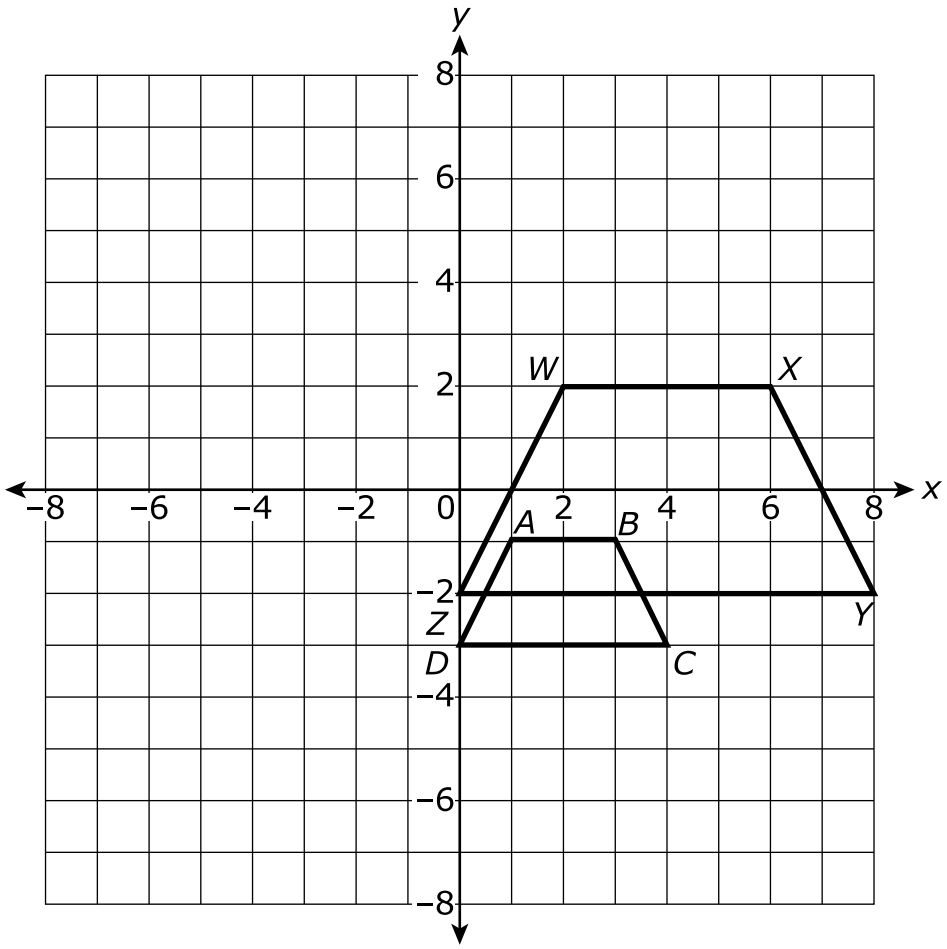
Ⓓ The distance from the North Pole to the South Pole measures approximately 3×10^7 times as many miles as the diagonal distance across the United States.

58. For a year, Charlie records the balance of his checking account at the end of each month. His data can be represented by the linear model $y = 213.73x + 75.62$, where x is the number of months and y is the account balance.

Fill in the blanks with the values that correctly complete the statement.

Based on the linear model, Charlie began with $\$$ ☐ in his checking account, and the balance of his checking account increases by $\$$ ☐ each month.

59. Austin drew two trapezoids. The two trapezoids are shown on the graph.



Which sequence of transformations can be applied to trapezoid $ABCD$ in order to verify that it is similar to trapezoid $WXYZ$?

Ⓐ a reflection over the x-axis, followed by a translation 3 units right and 3 units up

Ⓑ a dilation with a scale factor of 4 with a center of dilation at the origin, followed by a translation 1 unit up

Ⓒ a dilation with a scale factor of 2 with a center of dilation at the origin, followed by a translation 4 units up

Ⓓ a rotation 90° counterclockwise with a center of rotation at the origin, followed by a translation 4 units right and 1 unit up

60. Which numbers fall between 3 and 4 on a number line?

Select **two** answer choices.

Ⓐ $\frac{3+\pi}{2}$

Ⓑ $\frac{8\pi}{4+1}$

Ⓒ $\frac{3^2\pi}{9+1}$

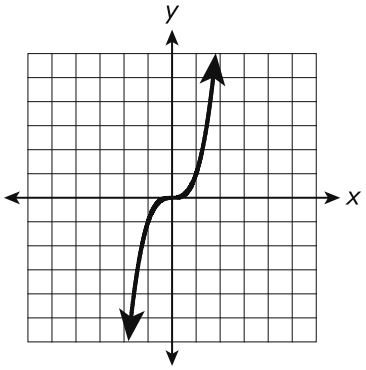
Ⓓ $\frac{\sqrt{8}}{1+3}$

Ⓔ $\frac{\sqrt{24}+2}{2}$

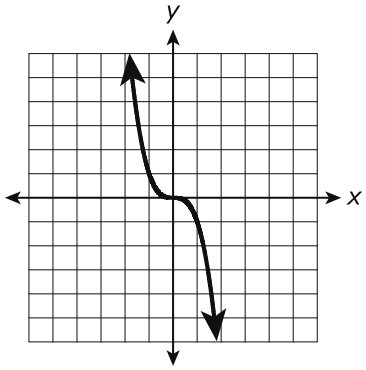
61. Which graphs show functions that are increasing?

Select **two** answer choices.

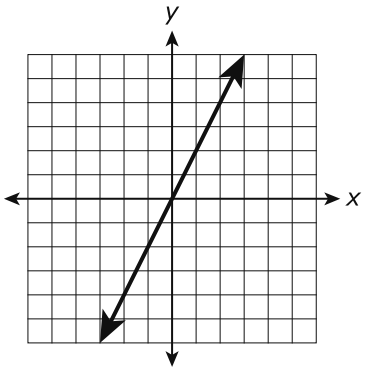
Ⓐ



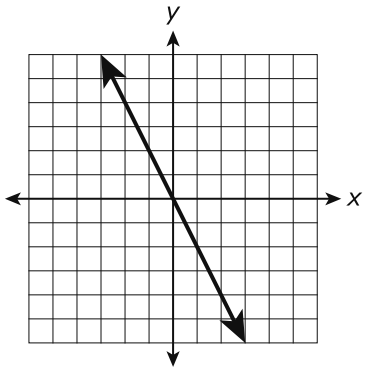
Ⓑ



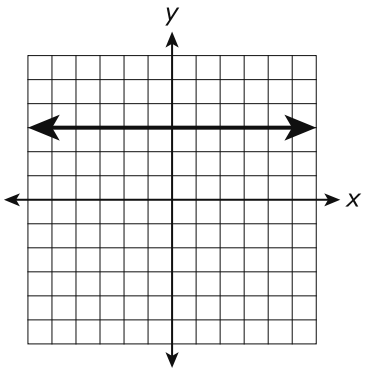
Ⓒ



Ⓓ



Ⓔ



STOP

Grade 8 Math Practice Test
Paper-Pencil Answer Key Document

Sequence	Key	Standard	Possible Points
1	A	8.EE.2	1
2	C	8.G.1b	1
3	C	8.SP.1	1
4	B	8.F.1	1
5	1, 4, 5, 8, 9	8.NS.1	1
6	C	8.EE.3	1
7	D	8.SP.2	1
8	2, 4, 5	8.F.2	1
9	C	8.EE.5	1
10	1, 9, 15, 17, 23	8.EE.4	1
11	C	8.EE.7a	1
12	C, D	8.F.4	1
13	D	8.NS.2	1
14	D	8.SP.4	1
15	C	8.G.8	1
16	55, 2	8.EE.8c	2
17	C, D	8.SP.1	1
18	1, 4, 5, 7, 10	8.F.3	1
19	A	8.G.6	1
20	B, C	8.F.1	1
21	A	8.NS.2	1
22	B, D	8.EE.1	1
23	25.9	8.G.9	1
24	B	8.F.2	1
25	A, E	8.F.5	1
26	D	8.G.7	1
27	A	8.EE.7	1
28	D	8.G.3	1
29	4, 5, 8, 11, 13, 17, 22, 23, 27, 29	8.G.1	2
30	C, D	8.SP.3	1
31	30.00, 30, 1.20	8.F.4	1
32	D	8.G.2	1

Grade 8 Math Practice Test
Paper-Pencil Answer Key Document

33	A, D	8.NS.1	1
34	B	8.EE.8a	1
35	C	8.G.4	1
36	D	8.G.5	1
37	B, D	8.F.3	1
38	1, 5, 7, 10, 15, 17	8.EE.2	1
39	D	8.G.3	1
40	B	8.NS.1	1
41	A	8.EE.8b	1
42	13	8.G.7	1
43	D	8.F.1	1
44	A	8.G.9	1
45	D	8.EE.7b	1
46	B	8.F.5	1
47	2, 3, 5, 8, 10	8.EE.1	1
48	A	8.G.6	1
49	C	8.EE.5	1
50	C	8.G.8	1
51	C, D, F	8.EE.1	2
52	D	8.G.5	1
53	D	8.EE.4	1
54	B, D	8.F.3	1
55	A	8.EE.6	1
56	1, 4, 5, 8	8.G.2	2
57	B	8.EE.3	1
58	75.62, 213.73	8.SP.3	1
59	C	8.G.4	1
60	A, E	8.NS.2	1
61	A, C	8.F.5	1