

May 20, 2021

Parents,

As you may know it is very easy for students to lose math skills over the summer. In an effort to help decrease this “summer slide” in math, students will be issued a few assignments on their mymathlab.com Algebra I class from this past school year. These assignments will be short and sweet, but designed to help your student retain what they have learned from this school year.

These summer assignments will count as your student’s first homework assignments in the first quarter of the 2021-2022 school year. Also, your student will be given a quiz during the first week of school covering the math skills retaught through these assignments. This quiz will count as the first quiz of the first quarter of the new school year.

If your student forgets his/her username and password, please email his/her teacher.

Kaleb Gardner - kgardner@hbcnsni.org

OR....

If your student does not have a mymathlab account yet, please download the PDF of the assignments from the HBCS website.

Kind Regards,

HBCS Math Department

Student: _____**Instructor:** Kaleb Gardner**Assignment:** Summer Prep for Geometry**Date:** _____**Course:** Algebra 1 (Honors)

1. Write the number as a product of primes.

63

 $63 = \underline{\hspace{2cm}}$

ID: 1.3.3

2. Type the given number as a product of prime numbers.

375

 $375 = \underline{\hspace{2cm}}$

ID: 1.3.5

3. Simplify the fraction to lowest terms.

 $\frac{25}{35}$

 $\frac{25}{35} = \underline{\hspace{2cm}}$

ID: 1.3.17

4. Multiply.

 $\frac{9}{8} \cdot \frac{2}{5}$

 $\frac{9}{8} \cdot \frac{2}{5} = \underline{\hspace{2cm}}$ (Type a simplified fraction.)

ID: 1.3.21

5. Divide as indicated. Write the answer in lowest terms.

 $\frac{1}{2} \div \frac{7}{10}$

 $\frac{1}{2} \div \frac{7}{10} = \underline{\hspace{2cm}}$

ID: 1.3.25

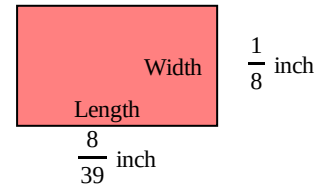
6. Multiply as indicated. Write the answer in lowest terms.

$$1\frac{1}{9} \cdot \frac{1}{3}$$

$$1\frac{1}{9} \cdot \frac{1}{3} = \underline{\hspace{2cm}} \text{ (Type an integer or a simplified fraction.)}$$

ID: 1.3.29

7. Find the area of the rectangle. Recall that area = length • width.



The area is square inch.
(Type a simplified fraction.)

ID: 1.3.31

8. Add the fractions. Reduce the answer to lowest terms.

$$\frac{4}{7} + \frac{1}{4}$$

$$\frac{4}{7} + \frac{1}{4} = \underline{\hspace{2cm}} \text{ (Simplify your answer.)}$$

ID: 1.3.47

9. Add or subtract as indicated. Write the answer in lowest terms.

$$5\frac{15}{18} - 4\frac{1}{6}$$

$$5\frac{15}{18} - 4\frac{1}{6} = \underline{\hspace{2cm}}$$

(Simplify your answer. Type an integer, fraction, or mixed number.)

ID: 1.3.49

10. Subtract the fractions. Reduce the answer to lowest terms.

$$\frac{8}{9} - \frac{4}{21}$$

$$\frac{8}{9} - \frac{4}{21} = \underline{\hspace{2cm}} \text{ (Simplify your answer.)}$$

ID: 1.3.51

11. The circle below represents a whole, or 1. Use subtraction to determine the unknown part of the circle.

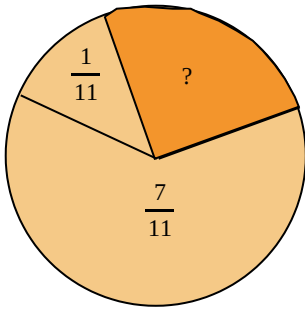
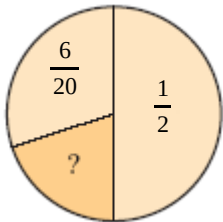


Figure not drawn to scale.

ID: 1.3.55

The unknown part of the circle is _____.
(Type an integer or a simplified fraction.)

12. The circle below represents a whole, or 1. Use subtraction to determine the unknown part of the circle.



ID: 1.3.57

The unknown part of the circle is _____.
(Type an integer or a simplified fraction.)

13. Solve the equation for x.

$$5(3x + 9) = 15x + 45$$

Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

- A. $x =$ _____ (Type an integer or a fraction. Simplify your answer.)
- B. The solution is all real numbers.
- C. There is no solution.

ID: 2.4.29

14. Solve the equation for x.

$$\frac{x}{6} - 4 = \frac{x}{6}$$

Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

- A. $x =$ _____ (Type an integer or a fraction. Simplify your answer.)
- B. The solution is all real numbers.
- C. There is no solution.

ID: 2.4.31

15. Solve the equation for x.

$$6x - 6 = 6(x - 2)$$

Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

- A. $x =$ _____ (Type an integer or a simplified fraction.)
- B. The solution is all real numbers.
- C. There is no solution.

ID: 2.4.33

16. Solve the equation for x.

$$-5(2x - 9) + 2 = -10x + 47$$

Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

- A. $x =$ _____ (Type an integer or a fraction. Simplify your answer.)
- B. The solution is all real numbers.
- C. There is no solution.

ID: 2.4.35

17. Solve the equation for y.

$$\frac{8(3 - y)}{5} = -y$$

Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

- A. $y =$ _____ (Type an integer or a fraction. Simplify your answer.)
- B. The solution is all real numbers.
- C. There is no solution.

ID: 2.4.37

18. Solve the equation for t.

$$-3(t - 4) + 8t = 9t - 6$$

Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

- A. $t =$ _____ (Type an integer or a simplified fraction.)
- B. The solution is all real numbers.
- C. There is no solution.

ID: 2.4.39

19. Solve the given equation for y .

$$8(y + 9) + y = 4(y + 3) - 2$$

Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

- A. $y =$ _____ (Simplify your answer. Type an integer or a simplified fraction.)
- B. The solution is all real numbers.
- C. There is no solution.

ID: 2.4.41

20. Solve the equation for x .

$$\frac{6(x - 1)}{3} = \frac{2(x + 9)}{11}$$

Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

- A. $x =$ _____ (Type an integer or a fraction. Simplify your answer.)
- B. The solution is all real numbers.
- C. There is no solution.

ID: 2.4.43

21. Solve the equation for x .

$$3.5x + 2.8 = 27.3$$

Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

- A. $x =$ _____ (Type an integer or a fraction. Simplify your answer.)
- B. The solution is all real numbers.
- C. There is no solution.

ID: 2.4.45

22. Solve the equation for x .

$$\frac{x}{4} - 5 = \frac{x}{7} - 2$$

Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

- A. $x =$ _____ (Type an integer or a fraction. Simplify your answer.)
- B. The solution is all real numbers.
- C. There is no solution.

ID: 2.4.53

23. Use the list given below to justify how the second equation is equivalent to the first equation.

- | | |
|--|--|
| <p>A Distributive Property
[$a(b + c) = ab + ac$]</p> <p>B Commutative Property of Addition
[ordering of addition of terms]</p> <p>C Associative Property of Addition
[grouping of addition of terms]</p> <p>D Commutative Property of Multiplication
[ordering of multiplication of terms]</p> <p>E Associative Property of Multiplication
[grouping of multiplication of terms]</p> | <p>F 0 is the identity element for addition
[$0 + a = a$].</p> <p>G 1 is the identity element for multiplication
[$1 \cdot a = a$].</p> <p>H Adding or subtracting the same number to/from both sides of an equation does not change its solution.</p> <p>I Multiplying or dividing both sides of an equation by the same nonzero number does not change its solution.</p> |
|--|--|

Step	Justification
$31x - 2 = 2(13x + 9)$	
$31x - 2 = 26x + 18$	

(Type the letter corresponding to the correct justification from the list above.)

ID: 2.4.67

24. Write the following phrase as an algebraic expression. Use x for the unknown number.

The sum of -5 and three times a number.

The translation is _____.

ID: 2.4.77

25. Write the phrase as a variable expression.

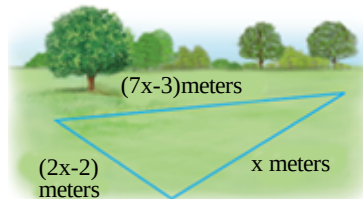
The product of 6 and the sum of a number and -4 .

The variable expression is _____.

(Type an expression using x as the variable. Do not simplify.)

ID: 2.4.79

26. A plot of land is in the shape of a triangle. If one side is x meters, a second side is $(2x - 2)$ meters and a third side is $(7x - 3)$ meters, express the perimeter of the lot as a simplified expression in x .



The perimeter of the lot is (_____) meters.

ID: 2.4.81

27. Which of the following is the usually first step when using a general strategy for solving equations with fractions?

Choose the correct answer below.

- A. Get all variable terms on one side.
- B. Multiply both sides by the LCD.
- C. Use the distributive property.
- D. Use the multiplication property to get the variable alone.

ID: 2.4.RA-1

28. Determine whether each ordered pair is a solution of the given linear equation.

$$2x + 3y = 9; (3,1), (7,0), (0,2)$$

Is (3,1) a solution to the given linear equation?

- No
- Yes

Is (7,0) a solution to the given linear equation?

- No
- Yes

Is (0,2) a solution to the given linear equation?

- Yes
- No

ID: 3.1.39

29. Determine whether each ordered pair is a solution of $x = \frac{8}{9}y$.

Is (0,0) a solution of the given linear equation?

- Yes
- No

Is (8,9) a solution of the given linear equation?

- Yes
- No

ID: 3.1.41

30. Complete each ordered pair so that it is a solution of the given linear equation.

$$y = \frac{1}{2}x - 7; (6, \quad), (\quad, -6)$$

The first ordered pair is $(6, \underline{\hspace{2cm}})$.

The second ordered pair is $(\underline{\hspace{2cm}}, -6)$.

ID: 3.1.47

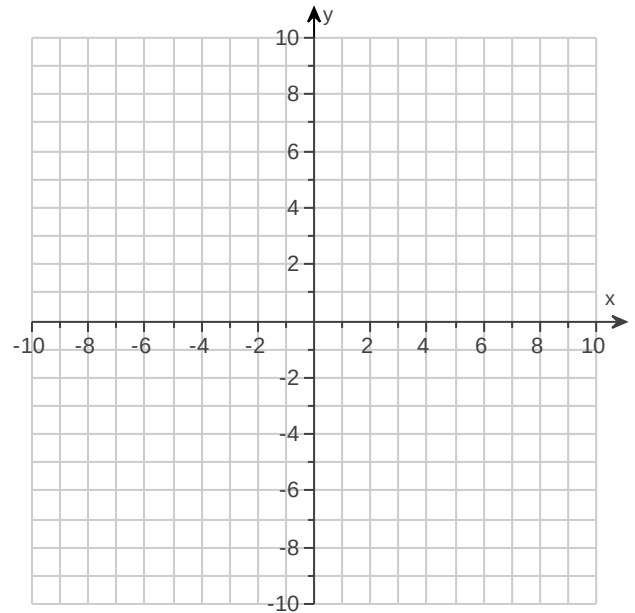
31. For the equation, find three ordered pair solutions by completing the table. Then use any two of the ordered pairs to graph the equation.

$$x - y = 6$$

Complete the table below.

x	y
	0
2	
	-2

Use the graphing tool to graph the equation.



ID: 3.2.9

32. For the given equation, find three ordered pairs by completing the table. Then use the ordered pairs to graph the equation.

$$y = 3x - 1$$

x	y
0	
1	
2	

Complete the table.

x	y
0	<input type="text"/>
1	<input type="text"/>
2	<input type="text"/>

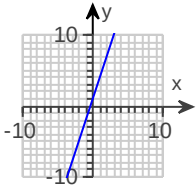
(Type an integer or a simplified fraction.)

(Type an integer or a simplified fraction.)

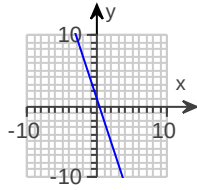
(Type an integer or a simplified fraction.)

Choose the correct graph of $y = 3x - 1$ below.

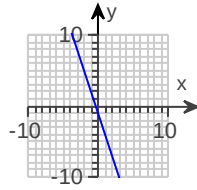
A.



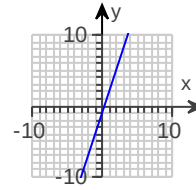
B.



C.



D.

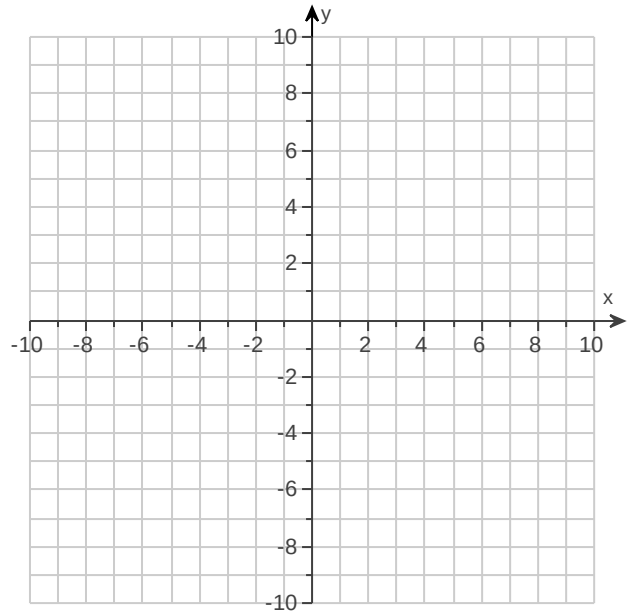


ID: 3.2.15

33. Graph the linear equation.

$$x = 3$$

Use the graphing tool to graph the linear equation.

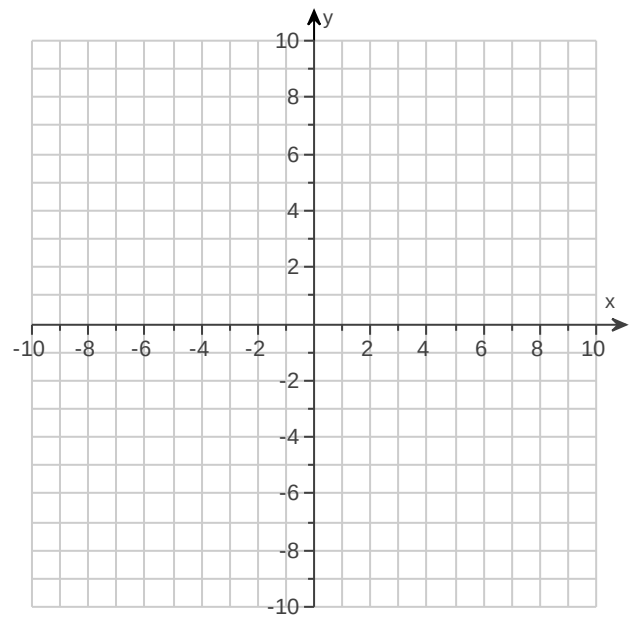


ID: 3.2.25

34. Graph the linear equation.

$$y = -5$$

Use the graphing tool to graph the linear equation.

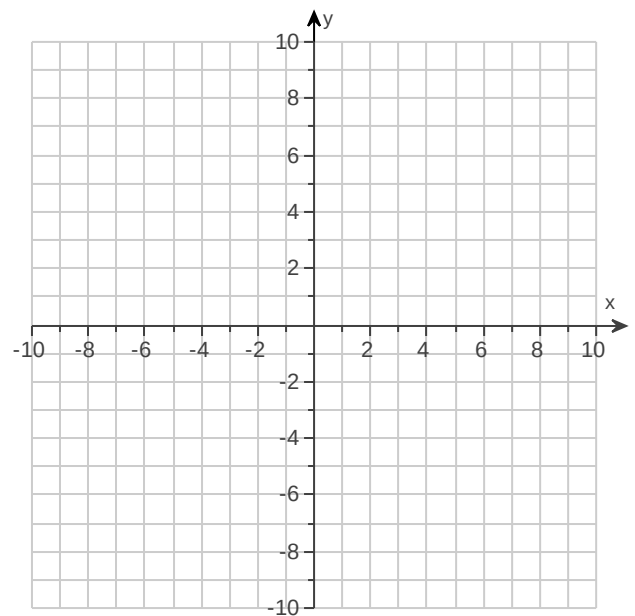


ID: 3.2.27

35. Graph the linear equation.

$$y = \frac{2}{5}x + 4$$

Use the graphing tool to graph the linear equation.

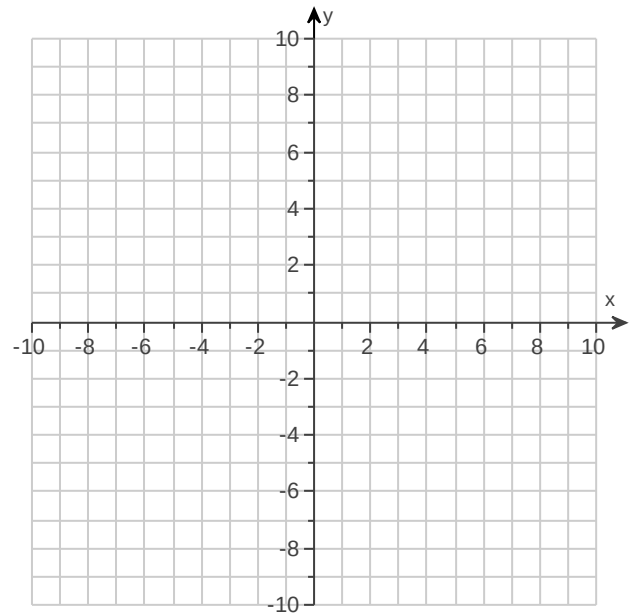


ID: 3.2.35

36. Graph the linear equation.

$$4x - 2y = 8$$

Use the graphing tool to graph the linear equation.

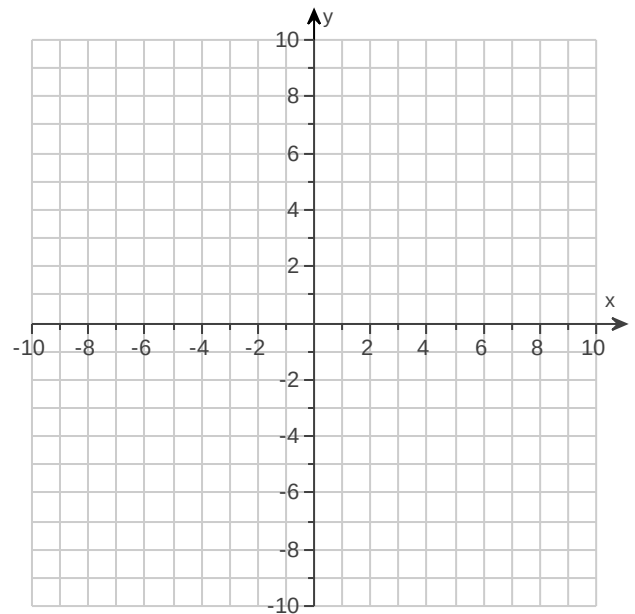


ID: 3.2.37

37. Graph the linear equation.

$$y = -2.5x + 2$$

Use the graphing tool to graph the equation.



ID: 3.2.39

38. Three vertices of a rectangle are $(-3, -9)$, $(9, -9)$, and $(-3, 8)$.

- Find the coordinates of the fourth vertex of the rectangle.
- Find the perimeter, P , of the rectangle.
- Find the area, A , of the rectangle.

a. The fourth vertex of the rectangle is _____ . (Type an ordered pair.)

b. $P =$ _____ units

c. $A =$ _____ sq units

ID: 3.2.55

39. Which equation is in standard form for a linear equation?

Choose the correct answer below.

- A. $Ax + By = C$
- B. $m = \frac{y_2 - y_1}{x_2 - x_1}$
- C. $(y - y_1) = m(x - x_1)$
- D. $y = mx + b$

ID: 3.2.RA-1

40. If you were to graph $y = 2x$ and then $y = 2x - 1$, what would be the difference in the second graph?

Choose the correct answer below.

- A. It would be shifted down one unit from the graph of $y = 2x$.
- B. It would be shifted to the left one unit from the graph of $y = 2x$.
- C. It would be shifted to the right one unit from the graph of $y = 2x$.
- D. It would be shifted up one unit from the graph of $y = 2x$.

ID: 3.2.RA-2

41. When graphing an equation of the form $y = mx + b$, where does it cross the y -axis?

Choose the correct answer below.

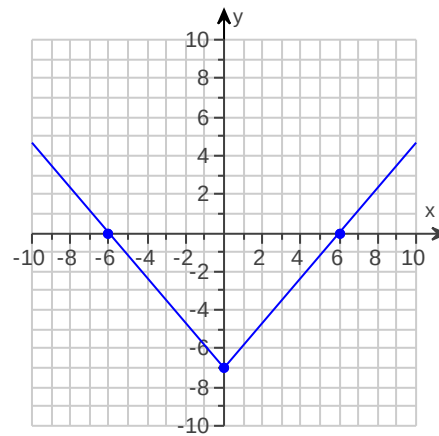
- A. (m, b)
- B. $(b, 0)$
- C. $(0, b)$
- D. (b, m)

ID: 3.2.RA-4

42. Identify the intercepts.

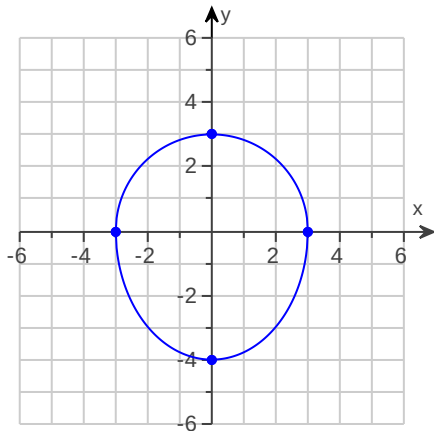
What are the intercepts?

_____ (Type an ordered pair. Use a comma to separate answers as needed.)



ID: 3.3.3

43. Identify the intercepts.



Identify all the x-intercepts.

_____ (Type an ordered pair. Use a comma to separate answers as needed.)

Identify all the y-intercepts.

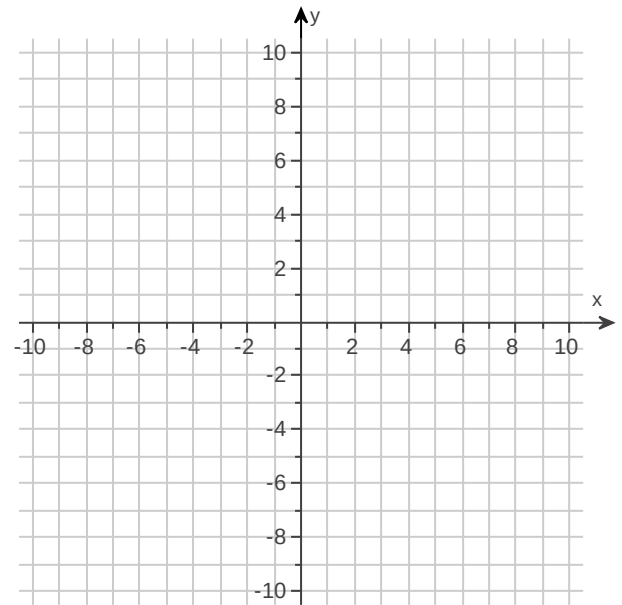
_____ (Type an ordered pair. Use a comma to separate answers as needed.)

ID: 3.3.7

44. Graph the linear equation by finding and plotting its intercepts.

$$x - y = 3$$

Use the graphing tool to graph the equation. Use the intercepts when drawing the line. If only one intercept exists, use it and another point to draw the line.

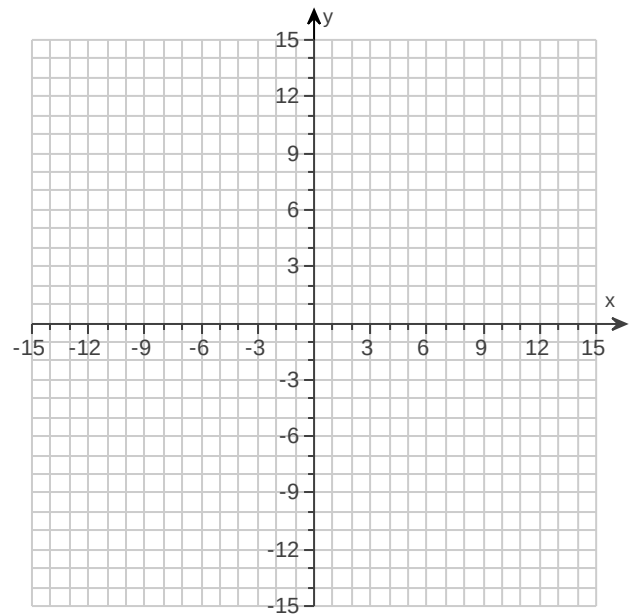


ID: 3.3.13

45. Graph using the x- and y-intercepts.

$$y = 7x + 7$$

Use the graphing tool to graph the linear equation. Use the intercepts when drawing the line. If only one intercept exists, use it and another point to draw the line.

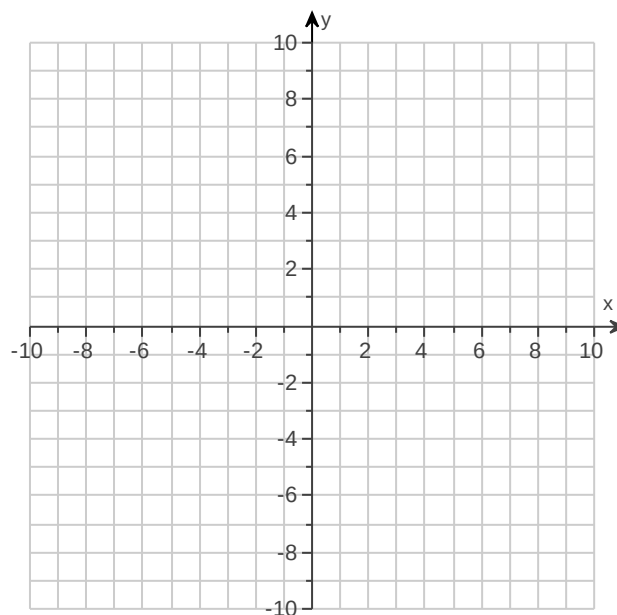


ID: 3.3.23

46. Graph the linear equation.

$$x = 2$$

Use the graphing tool to graph the linear equation.

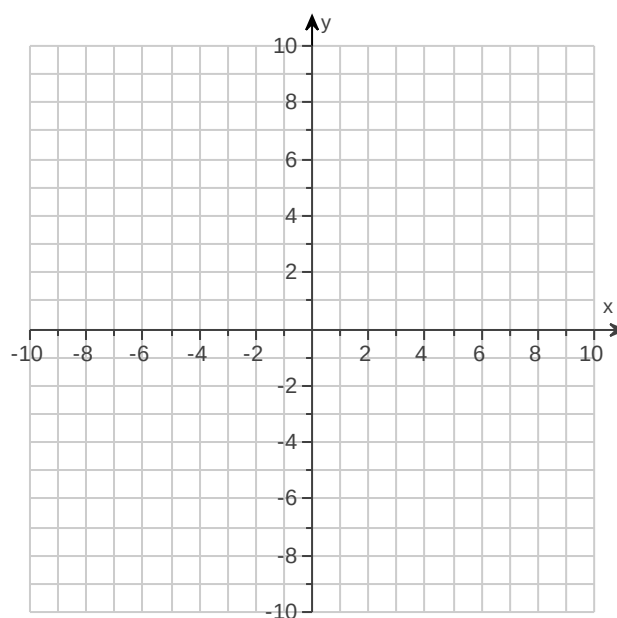


ID: 3.3.25

47. Graph the linear equation.

$$y = 4$$

Use the graphing tool to graph the linear equation.



ID: 3.3.27

48. Find the slope of the line that goes through the given points.

$$(10, -5) \text{ and } (10, -10)$$

Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

- A. The slope is _____. (Type an integer or a fraction. Simplify your answer.)
- B. The slope is undefined.

ID: 3.4.3

49. Find the slope of the line that goes through the given points.

$(-5, 2)$ and $(10, -6)$

Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

- A. The slope is _____. (Simplify your answer.)
- B. The slope is undefined.

ID: 3.4.5

50. Find the slope of the line that goes through the given points.

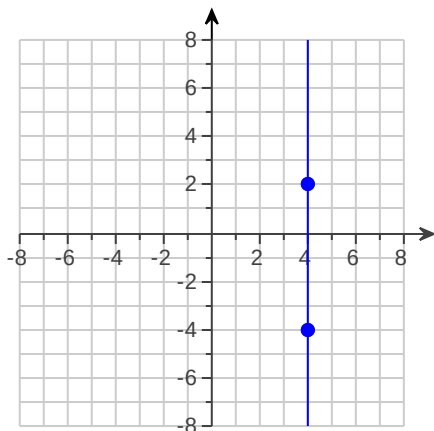
$(6, 8)$ and $(-8, 8)$

Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

- A. The slope is _____. (Type an integer or a fraction. Simplify your answer.)
- B. The slope is undefined.

ID: 3.4.7

51. Find the slope of the line if it exists.

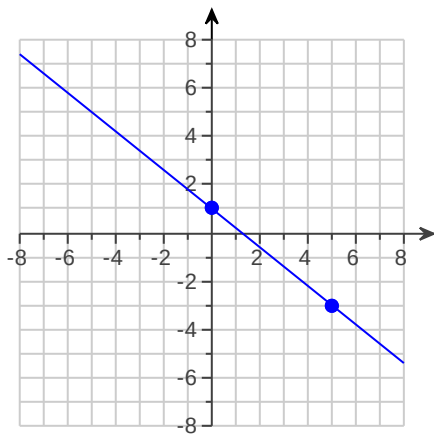


Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

- A. The slope is _____.
(Type an integer or a fraction. Simplify your answer.)
- B. The slope is undefined.

ID: 3.4.11

52. Find the slope of the line if it exists.



Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

- A. The slope is _____.
(Simplify your answer. Type an integer or a fraction.)
- B. The slope is undefined.

ID: 3.4.13

53. Find the slope of the line $y = 9$.

Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

- A. The slope is _____. (Type an integer or a simplified fraction.)
- B. The slope is undefined.

ID: 3.4.35

54. Find the slope of the line.

$$y = -2x + 1$$

Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

- A. The slope is _____. (Type an integer or a simplified fraction.)
- B. The slope is undefined.

ID: 3.4.37

55. Find the slope of the following line.

$$-3x - 7y = -21$$

Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

- A. The slope is _____. (Type an integer or a simplified fraction.)
- B. The slope is undefined.

ID: 3.4.43

56. Find the slope of the line $x = 8$.

Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

- A. The slope is _____. (Type an integer or a simplified fraction.)
- B. The slope is undefined.

ID: 3.4.45

57. Determine whether the pair of lines are parallel, perpendicular, or neither.

$$y = \frac{5}{3}x + 4$$

$$y = -\frac{5}{3}x$$

Choose the correct answer below.

- A. Neither
- B. Parallel
- C. Perpendicular

ID: 3.4.55

58. Determine whether the pair of lines are parallel, perpendicular, or neither.

$$4x = 3y + 1$$

$$-20x + 15y = 1$$

Choose the correct answer below.

- A. Neither
- B. Perpendicular
- C. Parallel

ID: 3.4.59

59. Determine whether this pair of lines is parallel, perpendicular, or neither.

$$5 + 2x = 7y$$

$$7x + 2y = 5$$

Choose the correct answer below.

- A. These two lines are perpendicular.
- B. These two lines are neither parallel nor perpendicular.
- C. These two lines are parallel.
- D. More information is needed.

ID: 3.4.61

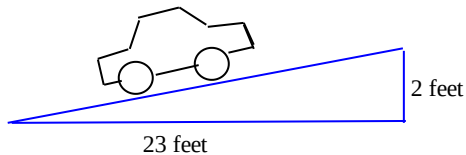
60. The pitch of a roof is its slope. Find the pitch of the roof shown.



The pitch is _____ . (Simplify your answer.)

ID: 3.4.63

61. The grade of a road is its slope written as a percent. Find the grade of the road shown.



The grade is _____ %.
(Round to one decimal place as needed.)

ID: 3.4.65

62. Given $\frac{\text{rise}}{\text{run}} = \frac{4}{3}$, it means _____.

Choose the correct answer below.

- A. The line will go down 4 units and then run 3 units right.
- B. The line will go up 3 units and then run 4 units to the right.
- C. The line will go up 4 units and then run 3 units to the left.
- D. The line will go up 4 units and then run 3 units to the right.

ID: 3.4.RA-4

63. Which of the following is correct about the slope of parallel lines?

Choose the correct answer below.

- A. Nonvertical parallel lines will have the same slope but different y-intercepts.
- B. Nonvertical parallel lines will have the same slope and y-intercept.
- C. The product of the slope of the two lines would be -1 .
- D. The slope of nonvertical parallel lines will be m and $-m$.

ID: 3.4.RA-5

64. Solve the system of equations by graphing.

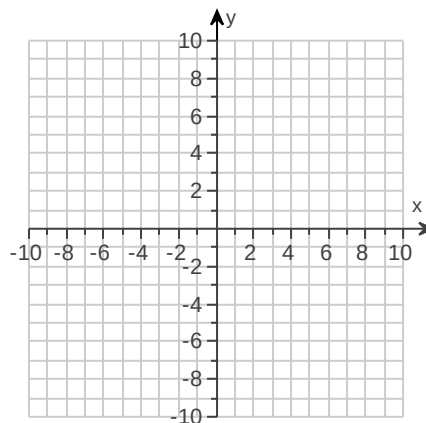
$$\begin{cases} x + y = 9 \\ x - y = -3 \end{cases}$$

Use the graphing tool to graph the system.

Select the correct choice below and fill in any answer boxes present in your choice.

- A. The solution of the system is _____.
(Type an ordered pair.)
- B. There are infinitely many solutions.
- C. There is no solution.

ID: 5.1.9



65. Solve the system of linear equations by graphing.

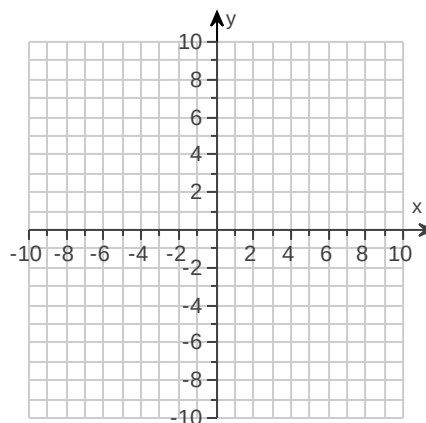
$$\begin{cases} x + y = 5 \\ -x + y = -5 \end{cases}$$

Use the graphing tool to graph the system.

What is the solution of the system of equations? Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

- A. _____ (Type an ordered pair.)
- B. There are infinitely many solutions.
- C. There is no solution.

ID: 5.1.11



66. Solve the system of equations by graphing.

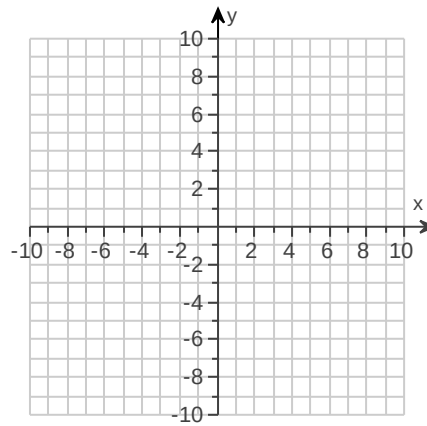
$$\begin{cases} y = -3x - 4 \\ y = x - 4 \end{cases}$$

Use the graphing tool to graph the system.

Select the correct choice below and fill in any answer boxes present in your choice.

- A. The solution of the system is _____.
(Type an ordered pair.)
- B. There are infinitely many solutions.
- C. There is no solution.

ID: 5.1.15



67. Solve the system of linear equations by graphing.

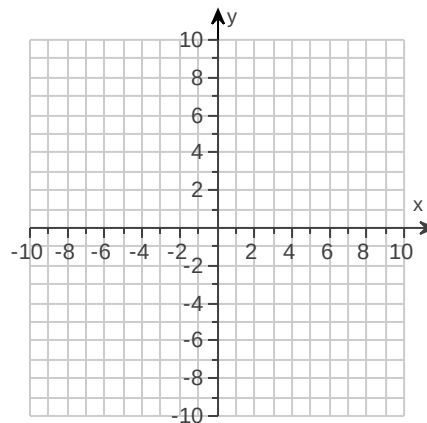
$$\begin{cases} 2x + y = -1 \\ -4x = 2y - 6 \end{cases}$$

Use the graphing tool to graph the system.

What is the solution of the system of equations? Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

- A. _____ (Type an ordered pair.)
- B. There are infinitely many solutions.
- C. There is no solution.

ID: 5.1.27



68. Solve the system of equations by graphing.

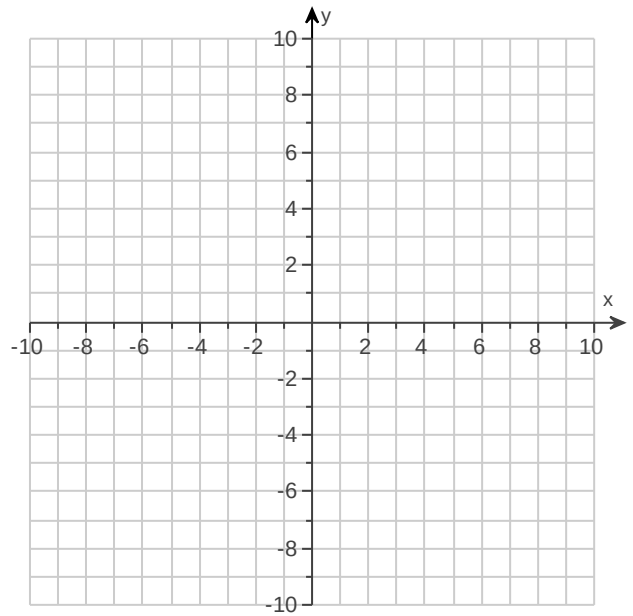
$$\begin{cases} y - x = 0 \\ -3x + 3y = 0 \end{cases}$$

Use the graphing tool to graph the system.

Select the correct choice below and fill in any answer boxes present in your choice.

- A. The solution of the system is _____.
(Type an ordered pair.)
- B. There are infinitely many solutions.
- C. There is no solution.

ID: 5.1.29



69. Solve the system of linear equations by graphing.

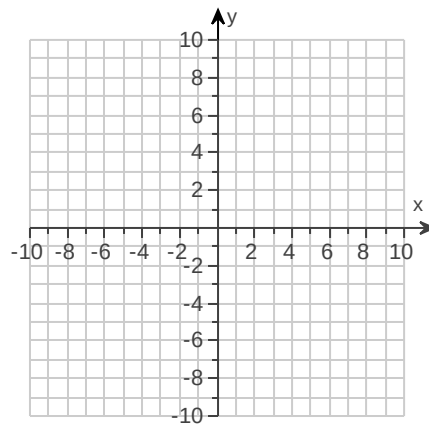
$$\begin{cases} x = -2 \\ y = -3 \end{cases}$$

Use the graphing tool to graph the system.

What is the solution of the system of equations? Select the correct choice below and fill in any answer boxes within your choice.

- A. There is one solution. The solution is _____.
(Type an ordered pair.)
- B. There are infinitely many solutions.
- C. There is no solution.

ID: 5.1.31



70. Solve the system of equations by the substitution method.

$$\begin{cases} y = 2x + 9 \\ y = 9x + 10 \end{cases}$$

Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

- A. The solution is _____. (Simplify your answer. Type an ordered pair.)
- B. There are infinitely many solutions.
- C. There is no solution.

ID: 5.2.7

71. Solve the system of equations by the substitution method.

$$\begin{cases} 6x - 2y = 26 \\ y = x - 5 \end{cases}$$

Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

- A. The solution is _____. (Simplify your answer. Type an ordered pair.)
- B. There are infinitely many solutions.
- C. There is no solution.

ID: 5.2.9

72. Solve the system of equations by the addition method.

$$\begin{cases} 3x - 4y = 7 \\ 4x + 8y = 6 \end{cases}$$

The solution is _____.
(Simplify your answer. Type an ordered pair.)

ID: 5.3.17

73. Solve the system of equations by the addition method.

$$\begin{cases} 3x = 4y - 10 \\ -9x - 8y = 10 \end{cases}$$

Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

- A. The solution is _____. (Simplify your answer. Type an ordered pair.)
- B. There are infinitely many solutions.
- C. There is no solution.

ID: 5.3.19

74. Add.

$$(8x + 2) + (7x + 2)$$

$$(8x + 2) + (7x + 2) = \underline{\hspace{2cm}} \text{ (Do not factor.)}$$

ID: 6.2.35

75. Perform the indicated operation.

$$(x + 8) + (-7x^2 - x + 12)$$

$$(x + 8) + (-7x^2 - x + 12) = \underline{\hspace{2cm}} \text{ (Simplify your answer.)}$$

ID: 6.2.37

76. Subtract the given expressions.

$$4x - (5x - 5)$$

$$4x - (5x - 5) = \underline{\hspace{2cm}}$$

ID: 6.2.41

77. Subtract.

$$(3y^2 + 7y - 6) - (-4y + 5)$$

$$(3y^2 + 7y - 6) - (-4y + 5) = \underline{\hspace{2cm}} \text{ (Simplify your answer.)}$$

ID: 6.2.43

78. Perform the indicated operation.

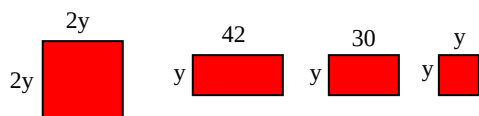
Subtract $(7y^2 - 2y - 2)$ from the sum of $(5y^2 + 1)$ and $(2y + 2)$.

$$(7y^2 - 2y - 2) \text{ subtracted from the sum of } (5y^2 + 1) \text{ and } (2y + 2) \text{ is } \underline{\hspace{2cm}}.$$

(Do not factor.)

ID: 6.2.67

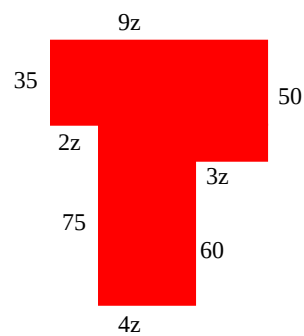
79. Find the area of each figure. Write a polynomial that describes the total area of the rectangles and squares shown. Then simplify the polynomial.



The simplified expression for the total area of the figures is $\underline{\hspace{2cm}}$.

ID: 6.2.71

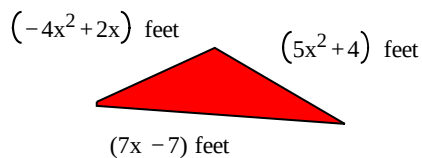
80. Recall that the perimeter of a figure such as the one to the right is the sum of the length of its sides. Find the perimeter of the figure.



Perimeter = _____ (Simplify your answer.)

ID: 6.2.73

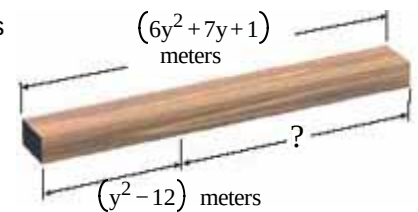
81. Find the perimeter of the given figure.



Perimeter = (_____) feet
(Simplify your answer.)

ID: 6.2.75

82. A wooden beam is $(6y^2 + 7y + 1)$ meters long. If a piece of length $(y^2 - 12)$ meters is cut, express the length of the remaining piece of beam as a polynomial in y .



The length of the remaining piece of beam is (_____) m.

ID: 6.2.77

83. Multiply.

$$-4a(a + 3)$$

$-4a(a + 3) =$ _____ (Simplify your answer.)

ID: 6.3.11

84. Multiply.

$$4x(3x^2 - 5x + 5)$$

$$4x(3x^2 - 5x + 5) = \underline{\hspace{2cm}} \text{ (Simplify your answer.)}$$

ID: 6.3.13

85. Multiply.

$$(x + 7)(x + 2)$$

$$(x + 7)(x + 2) = \underline{\hspace{2cm}} \text{ (Simplify your answer.)}$$

ID: 6.3.21

86. Multiply.

$$\left(x + \frac{6}{7}\right)\left(x - \frac{1}{7}\right)$$

$$\left(x + \frac{6}{7}\right)\left(x - \frac{1}{7}\right) = \underline{\hspace{2cm}}$$

(Use integers or fractions for any numbers in the expression.)

ID: 6.3.25

87. Multiply.

$$(2x^2 + 3)(4x^2 + 5)$$

$$(2x^2 + 3)(4x^2 + 5) = \underline{\hspace{2cm}}$$

ID: 6.3.27

88. Find the following product.

$$(5y + 9)^2$$

$$(5y + 9)^2 = \underline{\hspace{2cm}}$$

ID: 6.3.29

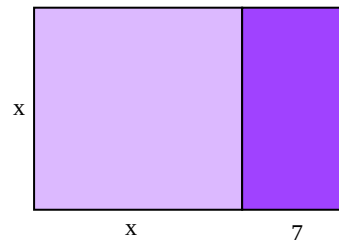
89. Multiply.

$$(x + 4)(x^3 - 2x + 5)$$

$$(x + 4)(x^3 - 2x + 5) = \underline{\hspace{2cm}}$$

ID: 6.3.39

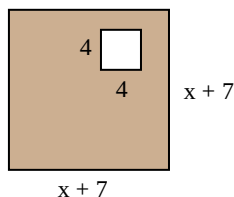
90. The area of the entire rectangle to the right is $x(x + 7)$. Find another expression for this area by finding the sum of the areas of the smaller rectangles.



The area is _____.

ID: 6.3.79

91. Write a polynomial that describes the area of the shaded region.



The area is _____.

ID: 6.3.95

92. Factor out the GCF from the polynomial.

$$45y^7 + 40y^3$$

$$45y^7 + 40y^3 = \underline{\hspace{2cm}} \text{ (Factor completely.)}$$

ID: 7.1.31

93. Factor out the GCF from the polynomial.

$$9x - 27y + 9$$

$$9x - 27y + 9 = \underline{\hspace{2cm}} \text{ (Type your answer in factored form.)}$$

ID: 7.1.33

94. Factor the trinomial completely.

$$x^2 + 2x - 3$$

Select the correct choice below and, if necessary, fill in the answer box within your choice.

- A. $x^2 + 2x - 3 = \underline{\hspace{2cm}}$
- B. The polynomial is prime.

ID: 7.2.9

95. Factor the trinomial completely.

$$x^2 + 33x + 31$$

Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

- A. $x^2 + 33x + 31 =$ _____ (Type your answer in factored form.)
- B. The polynomial is prime.

ID: 7.2.11

96. Factor the trinomial completely.

$$5x^2 + 25x + 20$$

Select the correct choice below and fill in any answer boxes within your choice.

- A. $5x^2 + 25x + 20 =$ _____
(Factor completely.)
- B. The polynomial is prime.

ID: 7.2.23

97. Factor the trinomial completely.

$$4y^2 - 29y + 25$$

Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

- A. $4y^2 - 29y + 25 =$ _____ (Factor completely.)
- B. The polynomial is prime.

ID: 7.3.9

98. Factor the trinomial completely.

$$3x^2 - 20x - 7$$

Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

- A. $3x^2 - 20x - 7 =$ _____ (Factor completely.)
- B. The polynomial is prime.

ID: 7.3.11

99. Factor completely.

$$21x^2 + 68x + 32$$

Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

- A. $21x^2 + 68x + 32 =$ _____
- B. The polynomial is prime.

ID: 7.3.15

100. Factor the binomial completely.

$$-64 + x^2$$

Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

- A. $-64 + x^2 =$ _____ (Factor completely.)
- B. The polynomial is prime.

ID: 7.5.17

101. Factor the following binomial completely.

$$16m^4 - 625$$

Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

- A. $16m^4 - 625 =$ _____ (Factor completely.)
- B. The polynomial is prime.

ID: 7.5.19

102. Factor the following binomial completely.

$$x^{12} - y^{10}$$

Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

- A. $x^{12} - y^{10} =$ _____ (Factor completely.)
- B. The polynomial is prime.

ID: 7.5.21

103. Solve the equation.

$$x(x + 4) = 0$$

$x =$ _____

(Use a comma to separate answers as needed.)

ID: 7.6.5

104. Solve the equation.

$$8x(x - 9) = 0$$

$x =$ _____ (Use a comma to separate answers as needed.)

ID: 7.6.7

105. Solve the equation.

$$(8x - 3)(9x + 3) = 0$$

$x =$ _____

(Use a comma to separate answers as needed.)

ID: 7.6.9

106. Factor the following binomial completely.

$$x^2 - 100$$

Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

A. $x^2 - 100 =$ _____ (Factor completely.)

B. The polynomial is prime.

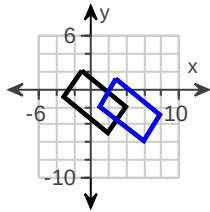
ID: 7.5.1

107. Graph the image of the figure on the right under the given translation.

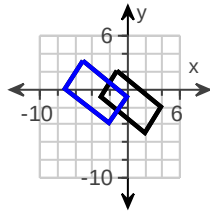
$$(x,y) \rightarrow (x + 4, y - 1)$$

Choose the correct graph below.

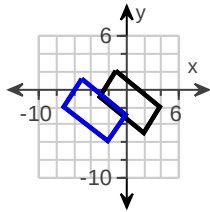
A.



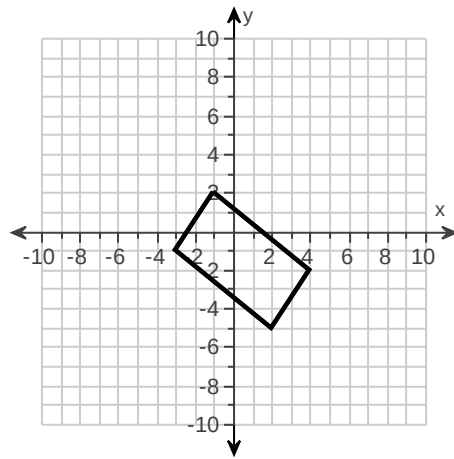
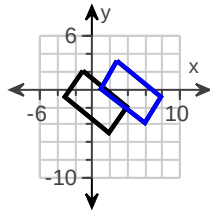
B.



C.

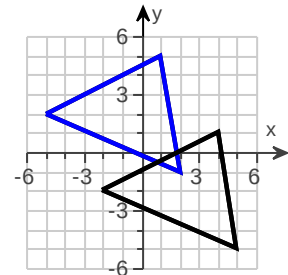


D.



ID: GA.13.3

108. The blue figure is a translation image of the black figure. Write a rule to describe the translation.

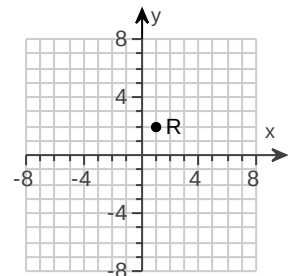


The translation rule is $(x,y) \rightarrow (x + (\underline{\hspace{2cm}}), y + (\underline{\hspace{2cm}}))$.

ID: GA.13.4

109. The given point is reflected across the line indicated. Find the coordinates of the image.

R across $y = -1$

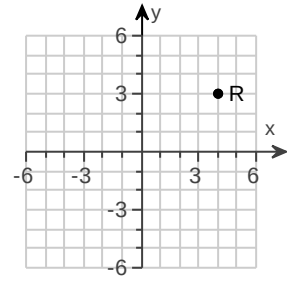


If the given point R is reflected across the line $y = -1$, the image is .
(Type an ordered pair.)

ID: GA.13.8

110. The given point is reflected across the line indicated. Find the coordinates of the image.

R across the y-axis

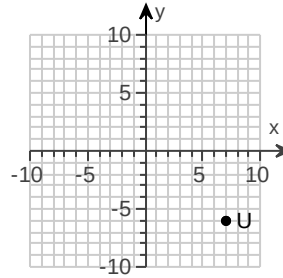


If the given point R is reflected across the y-axis, the image is _____ .
(Type an ordered pair.)

ID: GA.13.9

111. The given point is reflected across the line indicated. Find the coordinates of the image.

U across $x = 3$



If the given point U is reflected across the line $x = 3$, the image is _____ .
(Type an ordered pair.)

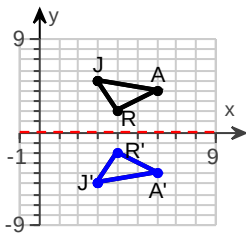
ID: GA.13.10

112. Given points J(3,5), A(6,4), and R(4,2), graph $\triangle JAR$ and its reflection image across the given line.

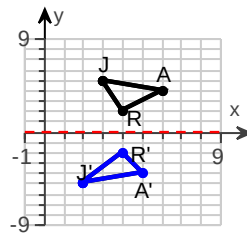
the x-axis

Choose the correct graph below.

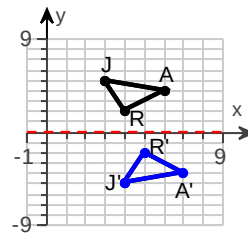
A.



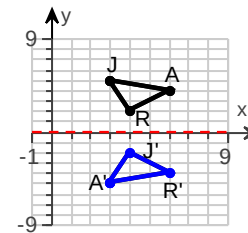
B.



C.



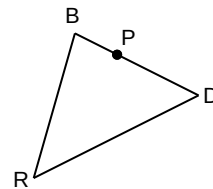
D.



ID: GA.13.11

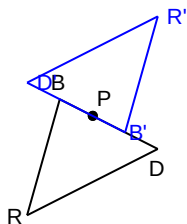
113. Copy the figure and point P. Draw the image of the figure for the given rotation about P. Use prime notation to label the vertices of the image.

The angle of rotation is 180° .

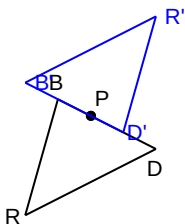


Choose the correct graph below.

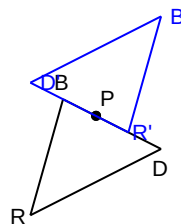
A.



B.



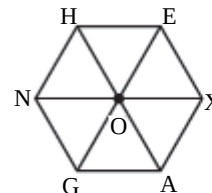
C.



ID: GA.13.18

114. Point O is the center of regular hexagon HEXAGN. Find the image of the given point for the given rotation.

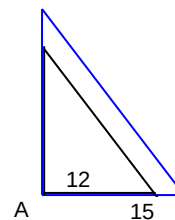
180° rotation of H about O



The image of H is _____.

ID: GA.13.20

115. The blue figure is a dilation image of the black figure. The labeled point is the center of dilation. Tell whether the dilation is an enlargement or a reduction. Then find the scale factor of the dilation.



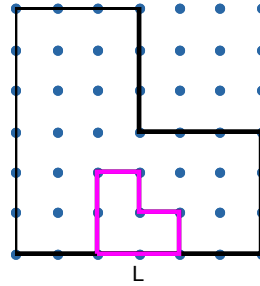
Is the dilation an enlargement or a reduction?

- Reduction
- Enlargement

The scale factor of the dilation is _____. (Simplify your answer.)

ID: GA.13.31

116. The pink figure is a dilation image of the black figure. The labeled point is the center of dilation. Tell whether the dilation is an enlargement or a reduction. Then find the scale factor of the dilation.



Is the dilation an enlargement or a reduction?

- Reduction
 Enlargement

The scale factor of the dilation is _____. (Simplify your answer.)

ID: GA.13.32