

**Algebra 2 Summer Assignment 2016 - SHOW ALL WORK ON YOUR OWN PAPER. CLEARLY LABEL FINAL ANSWERS. NO WORK = NO CREDIT.**

**Multiple Choice**

Identify the choice that best completes the statement or answers the question.

- \_\_\_\_\_ 1. What is an expression for the sale price of a bracelet that has been discounted 60% from its sticker price? Evaluate the expression for a sticker price of \$90.

Use the variable  $s$  for the sale price and  $p$  for the sticker price.

- |                         |                          |
|-------------------------|--------------------------|
| A $s = p - 0.6p$ ; \$36 | C $s = p + 60p$ ; \$5490 |
| B $s = p - 0.4p$ ; \$54 | D $s = p + 0.6p$ ; \$90  |

**Simplify each expression.**

\_\_\_\_\_ 2.  $\frac{4sg}{-5g}$

- |                   |                   |
|-------------------|-------------------|
| A $-\frac{4}{5}s$ | C $-\frac{5}{4}s$ |
| B $\frac{4}{5}g$  | D $-\frac{5}{4}g$ |

- \_\_\_\_\_ 3. What is the value of  $\frac{x}{y}$  when  $x = \frac{9}{4}$  and  $y = \frac{3}{5}$ ?

- |                  |                   |
|------------------|-------------------|
| A $\frac{15}{4}$ | C $\frac{27}{20}$ |
| B $\frac{4}{3}$  | D $-\frac{15}{4}$ |

- \_\_\_\_\_ 4. Which ordered pair is a solution of the equation  $y = -9x + 4$ ?

- |             |            |
|-------------|------------|
| A (10, -86) | C (6, -41) |
| B (-4, -58) | D (-6, 57) |

**What is the solution of each equation?**

\_\_\_\_\_ 5.  $2(h - 8) - h = h - 16$

- |      |                             |
|------|-----------------------------|
| A 8  | C infinitely many solutions |
| B -8 | D no solution               |

\_\_\_\_\_ 6.  $3 + 6z = 13 + 6z$

- |                  |                             |
|------------------|-----------------------------|
| A $-\frac{5}{6}$ | C infinitely many solutions |
| B $2\frac{2}{3}$ | D no solution               |

What is the solution of the proportion?

\_\_\_\_\_ 7.  $\frac{h}{-8} = \frac{19}{-2}$

- A 76  
B -152

- C -38  
D 16

**Numeric Response**

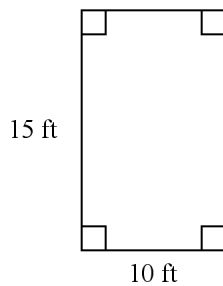
What is the solution of the equation?

8.  $\frac{5}{13}t = -9$

**Short Answer**

Find the perimeter of the figure.

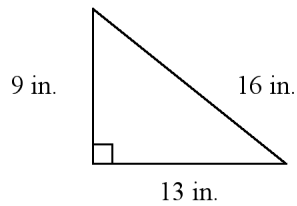
9.



Drawing not to scale

Find the area of the figure.

10.



Drawing not to scale

11. The frequency table below shows the ages of the first ten people in line at the movie theater. Make a line plot that shows the same data as the frequency table.

Ages	Frequency
22	3
23	2
27	2
29	1
30	2

**What is an algebraic expression for the word phrase?**

12. 3 times the sum of  $b$  and  $f$
13. the quotient of 8 and the difference of  $x$  and  $m$

**What is the simplified form of each expression?**

14.  $5(14 - 2)^2 \div 2$
15.  $4(20 + 12) \div (4 - 3)$
16.  $13 \left[ 6^2 \div (5^2 - 4^2) + 9 \right]$
17. Evaluate  $\frac{u}{z} + xy^2$ , for  $u = 20$ ,  $x = 4$ ,  $y = 7$ , and  $z = 10$ .
18. A square field has an area of 479 ft<sup>2</sup>. What is the approximate length of a side of the field? Give your answer to the nearest foot.

**What is each sum?**

19.  $-7 + 5$
20.  $-6 + (-3)$
21.  $-6.1 + 1.7$
22.  $\frac{7}{3} + \left(-\frac{3}{8}\right)$

What is each difference?

23.  $\frac{9}{4} - \frac{1}{7}$

24.  $-1.8 - 3.9$

What is the simplified form of each expression?

25.  $\pm\sqrt{\frac{100}{49}}$

What is the simplified form of each expression?

26.  $\frac{1}{3}(21m + 27)$

27.  $(2 - 9c)(-8)$

28.  $1.7m^2 + 6.5n - 4n + 2.5m^2 - n$

What is the solution of the equation?

29.  $\frac{b - 3}{-5} = -15$

What is the solution of the equation?

30.  $5d - d - 2d + 8 - 3d = 0$

What is the solution of the equation?

31.  $70 = -7(-2 - 2z)$

32.  $\frac{3p}{5} + \frac{8}{5} = 1$

What is the solution of the equation?

33.  $-4x - 9 = -5 - 6x$

What is the solution of the equation?

34.  $3p - 1 = 5(p - 1) - 2(7 - 2p)$

35.  $5(10x - 10) = -5(-4x + 4)$

**What is the given amount converted to the given units?**

36. 195 s; minutes

37. 86 cm; meters

38. 144 ft; inches

**What is the solution of the proportion?**

39.  $\frac{w + 14}{4w + 6} = \frac{3}{4}$

40. What percent of 140 is 112?

41. A dress that normally costs \$69.50 is on sale for 45% off. What is the sale price of the dress?

42. 145% of what number is 870?

**What are the solutions of the compound inequality? Graph the solutions.**

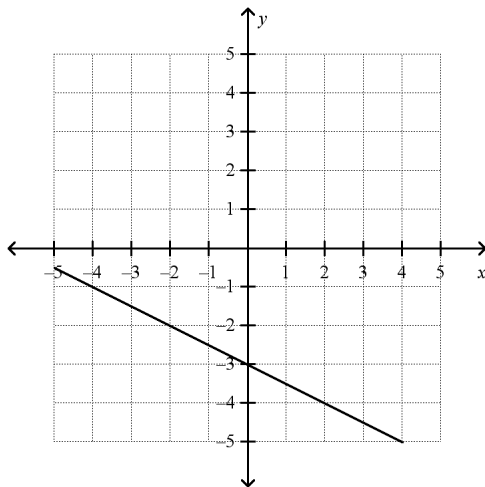
43.  $\frac{2x - 1}{3} + 3 \leq -4$  or  $\frac{8x - 2}{2} - 1 \geq 6$

**What are the solutions of the equation? Graph and check the solutions.**

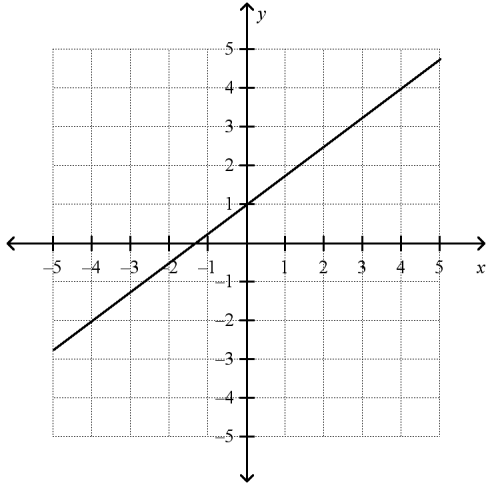
44.  $6|n| - 2 = 10$

**Find the slope of the line.**

45.



46.



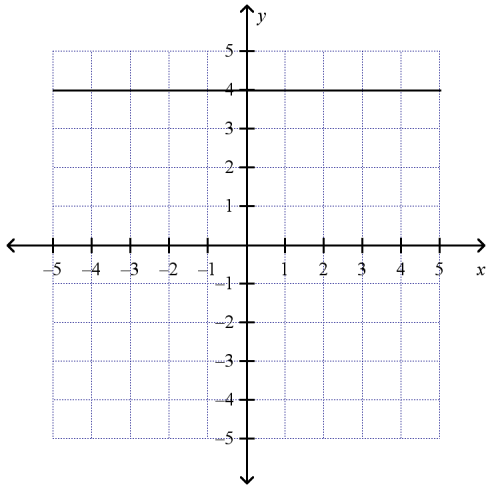
**What is the slope of the line that passes through the pair of points?**

47.  $(1, 7), (10, 1)$

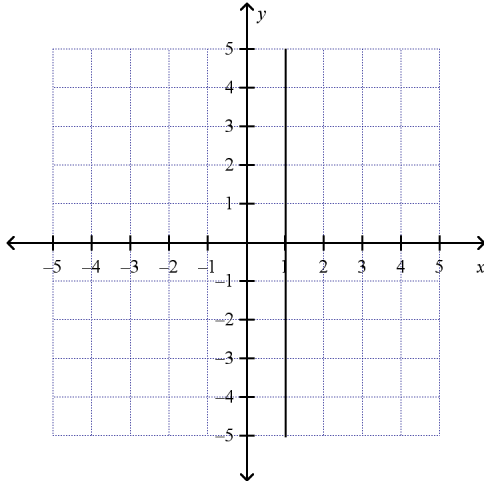
48.  $(-5.5, 6.1), (-2.5, 3.1)$

**What is the slope of the line?**

49.



50.

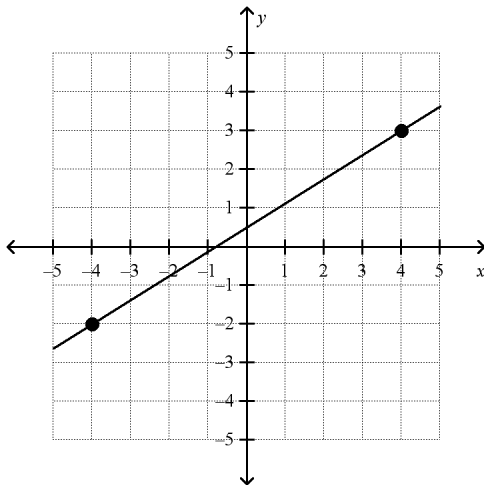


What are the slope and y-intercept of the graph of the given equation?

51.  $y = \frac{5}{8}x - \frac{4}{9}$

Write the slope-intercept form of the equation for the line.

52.



What equation in slope intercept form represents the line that passes through the two points?

53.  $(2, 5), (9, 2)$

Write an equation in point-slope form for the line through the given point with the given slope.

54.  $(-10, -6); m = -\frac{5}{8}$

**Graph the equation.**

55.  $y + 5 = -0.3(x + 5)$

**Find the  $x$ - and  $y$ -intercept of the line.**

56.  $-6.9x - 7.8y = 71.76$

57. Write  $y = \frac{2}{3}x + 7$  in standard form using integers.

**Write an equation for each translation of  $y = |x|$ .**

58. 2 units down

**Write an equation for each translation of  $y = |x|$ .**

59. 16.5 units right

60. Tom has a collection of 30 CDs and Nita has a collection of 18 CDs. Tom is adding 1 CD a month to his collection while Nita is adding 5 CDs a month to her collection. Find the number of months after which they will have the same number of CDs.

**What is the solution of the system?**

61.  $y = x + 6$   
 $y = 2x$

**What is the solution of the system?**

62.  $5x + 8y = -29$   
 $7x - 2y = -67$

**What is the simplified form of each expression?**

63.  $3g^{-2}b^2$

**What is each expression written using each base only once?**

64.  $9^{-8} \cdot 9^{-2} \cdot 9^{10}$

**What is the simplified form of each expression?**

65.  $7x^{-8} \cdot 6x^3$



What is the simplified form of the expression?

66.  $(y^{-5})^{-10} y^{10}$

What is the simplified form of each expression?

67.  $(3c^2 d^4)^3 (2c^5 d^8)^3$

What is the simplified form of the expression?

68.  $\left(\frac{m^{-1} m^5}{m^{-2}}\right)^{-3}$

Write the polynomial in standard form. Then name the polynomial based on its degree and number of terms.

69.  $9x + 5x^4 - 5$

Simplify the sum.

70.  $(8u^3 + 2u^2 + 7) + (3u^3 - 7u + 8)$

Simplify the difference.

71.  $(2w^2 - 4w - 8) - (5w^2 + 3w - 2)$

Simplify the product.

72.  $8p(-3p^2 + 6p - 2)$

Find the GCF of the terms of the polynomial.

73.  $48x^6 + 32x^2 - 26x^5$

Factor the polynomial.

74.  $42w^{10} + 24w^6$

**Simplify the product..**

75.  $(5h - 3)(3h + 7)$

76.  $(-2h + 5)(5h - 2)$

**What is a simpler form of the expression?**

77.  $(2n^2 + 5n + 4)(2n - 4)$

**What is a simpler form of each product?**

78.  $(2x - 6)^2$

**What is the factored form of the following expressions?**

79.  $w^2 + 18w + 77$

80.  $d^2 - 12d + 32$

**What is the factored form of the expression?**

81.  $6x^2 + 5x + 1$

**What is the factored form of the expression?**

82.  $8g^2 + 6g - 9$

**What is the factored form of the expression?**

83.  $d^2 - 22d + 121$

**What is the factored form of the expression?**

84.  $s^2 - 16$

**Multiply or divide. Write your answer in simplest form.**

85.  $\frac{3}{6} \times \frac{7}{10}$

86.  $\frac{5}{12} \div \frac{2}{8}$

Add or subtract. Write each answer in simplest form.

87.  $\frac{3}{4} + \frac{5}{10}$

Simplify the radical expression by rationalizing the denominator.

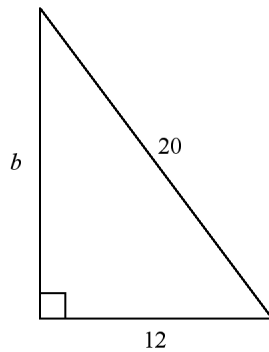
88.  $\frac{4}{\sqrt{11}}$

Simplify the radical expression.

89.  $\sqrt{72c^5d^4}$

What is the side length  $b$  in the triangle below?

90.



Use the quadratic formula to solve the equation. If necessary, round to the nearest hundredth.

91.  $x^2 + 3 = 9x$

What are the solutions of the equation?

92.  $z^2 - 6z - 27 = 0$

Solve the equation using square roots.

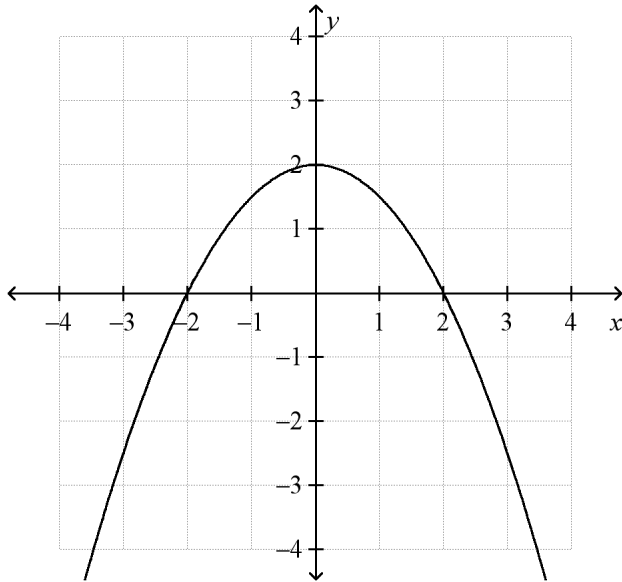
93.  $x^2 - 81 = 0$

Graph the function. Identify the vertex and axis of symmetry.

94.  $f(x) = x^2 + 4x + 1$

What are the coordinates of the vertex of the graph? Is it a maximum or minimum?

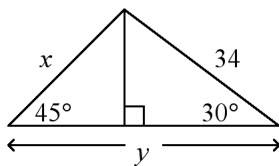
95.



What is the factored form of the expression?

96.  $15g^3 + 20g^2 - 18g - 24$

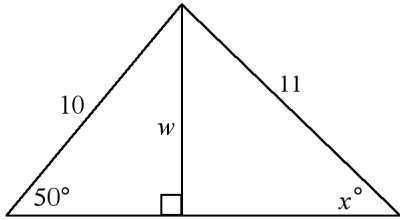
97.  $1\frac{1}{3} \div 2\frac{1}{2}$

98. Find the value of  $x$  and  $y$  rounded to the nearest tenth.

Name: \_\_\_\_\_

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99. Find the value of  $w$  and then  $x$ . Round lengths to the nearest tenth and angle measures to the nearest degree.



100. Find the value of  $w$ , then  $x$ . Round lengths of segments to the nearest tenth.

