

Name: _____ Class: _____ Date: _____

Summer Review for Students entering Honors Geometry 2018

Multiple Choice

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

Complete each statement.

- _____ 1. $190,000 \text{ cm}^3 = \blacksquare \text{ m}^3$
A. 190 B. 1.9 C. 1900 D. 0.19
- _____ 2. $0.77 \text{ m} = \blacksquare \text{ cm}$
A. 770 B. 0.077 C. 7.7 D. 77
- _____ 3. $9 \text{ ft} = \blacksquare \text{ in.}$
A. 27 B. 36 C. 90 D. 108
- _____ 4. $0.44 \text{ km}^2 = \blacksquare \text{ m}^2$
A. 4.4 B. 440 C. 0.044 D. 440,000

Simplify.

- _____ 5. $(-7.8)^2$
A. -6.084 B. -60.84 C. 60.84 D. 608.4
- _____ 6. $\left(\frac{10}{13}\right)^2$
A. $\frac{100}{13}$ B. $\frac{100}{169}$ C. $\frac{10}{13}$ D. $\frac{20}{13}$
- _____ 7. 10^2
A. -20 B. 100 C. -100 D. 20
- _____ 8. $(-18)^2$
A. -324 B. 324 C. -36 D. 36
- _____ 9. $\sqrt{\frac{169}{196}}$
A. $\frac{13}{14}$ B. $\frac{85}{98}$ C. $\frac{85}{196}$ D. $\frac{13}{196}$

Name: _____

Solve. Round to the nearest tenth if necessary.

- _____ 10. $11^2 + c^2 = 15^2$
A. ± 104 B. ± 6.1 C. ± 10.2 D. ± 2
- _____ 11. $x^2 = 41$
A. ± 6.4 B. ± 9.4 C. ± 13.5 D. ± 20.5
- _____ 12. $\sqrt{200}$
A. 20 B. 14 C. 5 D. 14.1

Evaluate the expression for $x = 2$ and $y = -4$.

- _____ 13. $(-x - y)^2$
A. 4 B. 36 C. -4 D. 25
- _____ 14. $5xy$
A. -40 B. -20 C. 40 D. 10
- _____ 15. $\frac{x^2 - y}{x + 5y - 1}$
A. 0 B. $-\frac{6}{19}$ C. $-\frac{8}{19}$ D. $-\frac{8}{17}$
- _____ 16. Evaluate the expression for $x = -2$
 $2x^2 - 3$
A. -11 B. 5 C. -7 D. 11

Simplify the expression.

- _____ 17. $(3m + 8)^2$
A. $9m^2 + 48m - 64$ C. $9m^2 - 48m + 64$
B. $9m^2 + 24m - 64$ D. $9m^2 + 48m + 64$
- _____ 18. $-4x - 6x - 1 - 5$
A. $2x + 4$ B. $-10x + 4$ C. $-10x - 6$ D. $2x - 6$
- _____ 19. $(2x + 2)(4x + 3)$
A. $8x^2 + 14x + 6$ C. $8x^2 - 14x + 6$
B. $8x^2 - 2x - 6$ D. $8x^2 + 2x - 6$

Name: _____

Express each ratio in simplest form.

_____ 20. $\frac{4w^2}{22w}$

A. $\frac{2w}{11}$

B. $\frac{4w}{22}$

C. $\frac{2w^2}{11}$

D. $\frac{4}{22w}$

_____ 21. $\frac{a+b}{4a+4b}$

A. $\frac{1}{a+b}$

B. $\frac{1}{8}$

C. $\frac{1}{4}$

D. $\frac{1}{3a+3b}$

_____ 22. $60x^2 : 15x$

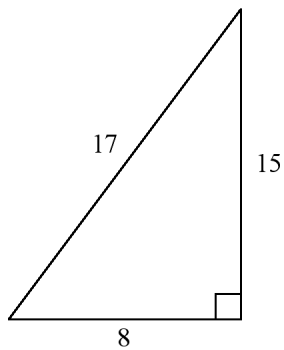
A. $15x : 1$

B. $4x : 1$

C. $1 : 4x$

D. $4 : 1$

_____ 23. shorter leg : hypotenuse



Drawing not to scale

A. $\frac{8}{15}$

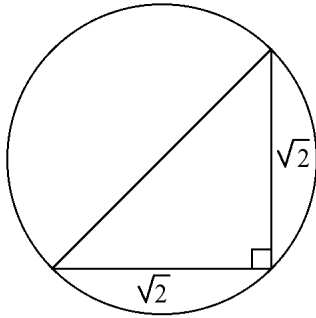
B. $1\frac{2}{15}$

C. $2\frac{1}{8}$

D. $\frac{8}{17}$

Name: _____

_____ 24. Write an expression in simplest form for $\frac{\text{area of circle}}{\text{area of triangle}}$.



Drawing not to scale

- A. π B. $\frac{\pi}{3}$ C. $\frac{\pi}{4}$ D. 3π

Simplify each expression.

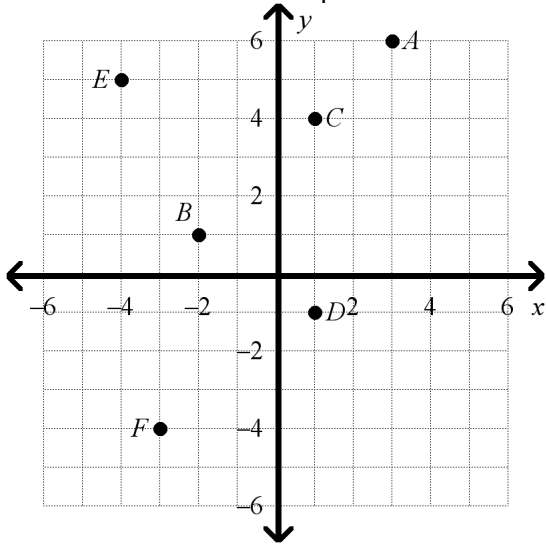
- _____ 25. $-3|9 + 3|$
A. -36 B. 12 C. 36 D. -12
- _____ 26. $|-20 - 11|$
A. 30 B. -30 C. 31 D. -31
- _____ 27. $|6| - |-11|$
A. -5 B. 17 C. 5 D. -17

Solve the equation.

- _____ 28. $|x| + 1 = 9$
A. ± 10 B. -8 C. 8 D. ± 8
- _____ 29. $|x| - 10 = 17$
A. -27 B. ± 7 C. ± 27 D. 27

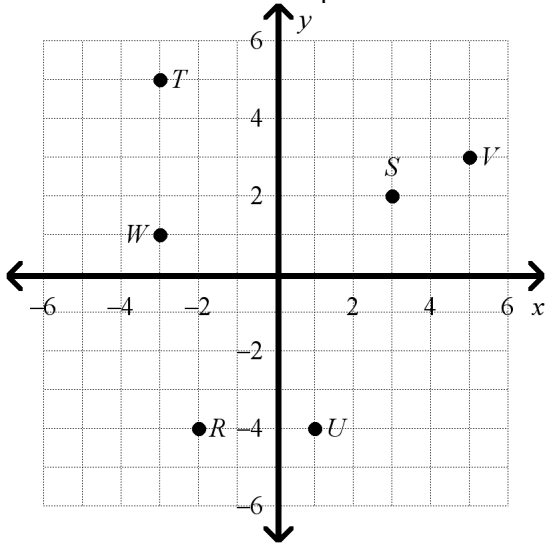
Name: _____

_____ 30. Name the coordinates of point E .



- A. (4, 5) B. (5, -4) C. (-4, 5) D. (-4, -5)

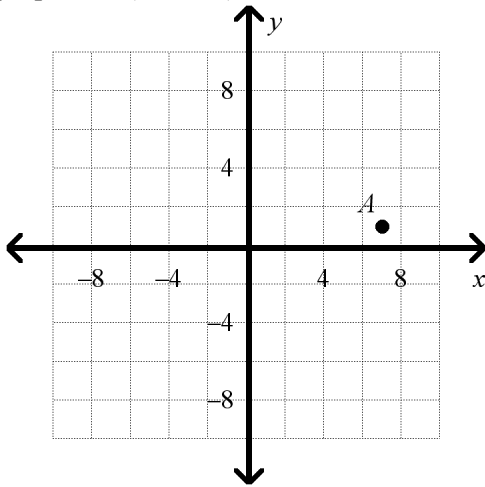
_____ 31. Name the coordinates of point S .



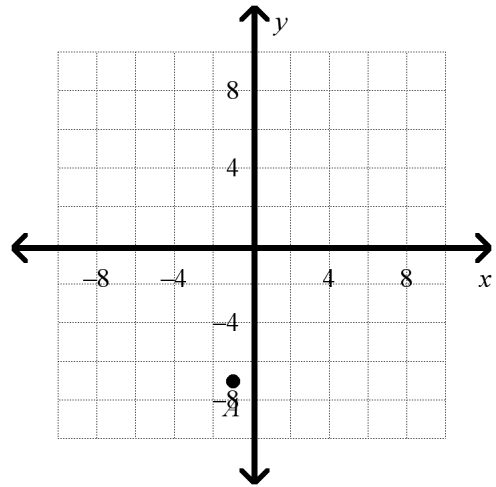
- A. (3, 2) B. (3, -2) C. (2, 3) D. (-3, 2)

Name: _____

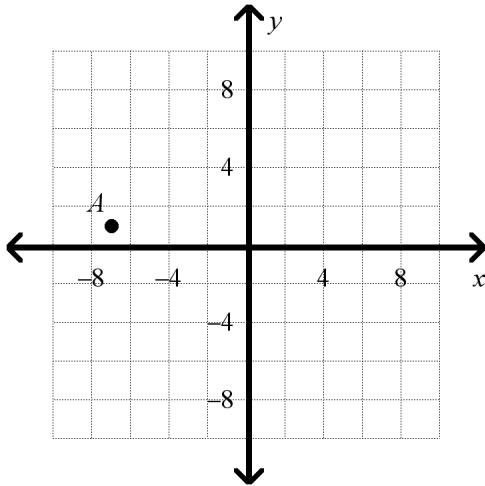
_____ 32. Graph point $A(-7, -1)$.



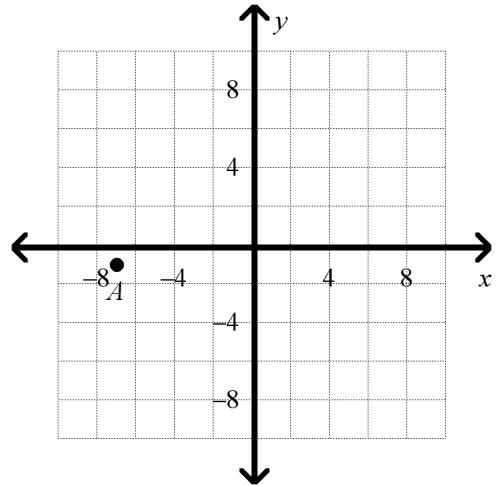
A.



C.



B.



D.

- _____ 33. In which quadrant or on which axis would you find the point $A(9, 1)$?
A. y -axis B. Quadrant II C. Quadrant I D. Quadrant III
- _____ 34. In which quadrant or on which axis would you find the point $B(10, -4)$?
A. Quadrant IV B. x -axis C. Quadrant I D. Quadrant III

Solve the equation.

- _____ 35. $6(y + 6) = 90$
A. 21 B. 9 C. 10 D. -21
- _____ 36. $\frac{2p}{3} - 15 = -19$
A. -19 B. -51 C. -6 D. -1
- _____ 37. $16m = 272$
A. 255 B. 33 C. 17 D. 289

Name: _____

- _____ 38. $-2(q + 8) = -10q$
A. -2 B. 1 C. 2 D. 5
- _____ 39. $7x - 7 = 3x + 9$
A. 4 B. 3 C. 1 D. 6
- _____ 40. $t - 115 = 10$
A. 125 B. 240 C. 123 D. -125
- _____ 41. Twice a number plus 18 is -16 . What is the number?
A. 2 B. 20 C. 1 D. -17
- _____ 42. The average high temperature over a five day period was 74°F . The temperatures for four of the days were 62°F , 77°F , 71°F , and 73°F . What was the high temperature on the fifth day?
A. 91 B. 89 C. 87 D. 84
- _____ 43. The area of a rectangle is 1568 cm^2 . If the length is twice as long as the width, what is the length of the rectangle?
A. 14 B. 28 C. 56 D. 784
- _____ 44. A customer went to a garden shop and bought some potting soil for $\$17.50$ and 8 shrubs. The total bill was $\$109.50$. Write and solve an equation to find the price of each shrub.
A. $8p + \$17.50 = \$109.50; p = \$11.50$ C. $8p + \$17.50 = \$109.50; p = \$13.75$
B. $8p + 17.5p = \$109.50; p = \4.29 D. $8(p + \$17.50) = \$109.50; p = \$8.50$

Write the percent as a decimal.

- _____ 45. 73.1%
A. 0.00731 B. 731 C. 7.31 D. 0.731

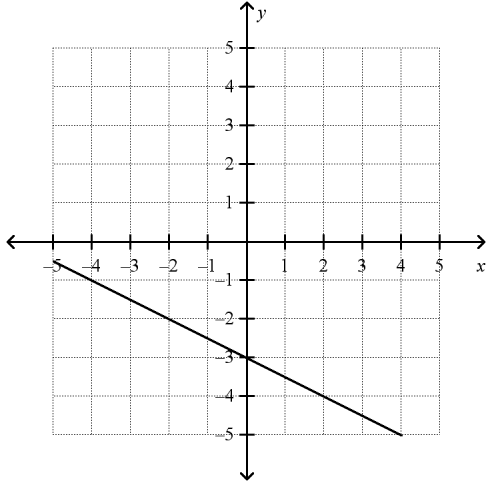
Simplify.

- _____ 46. 32% of 214
A. 71.9 B. 78.75 C. 68.48 D. 58.21
- _____ 47. 9.2% of 208
A. 19.14 B. 22.01 C. 191.36 D. 188.86

Name: _____

Find the slope of the line.

_____ 48.



- A. $\frac{1}{2}$ B. $-\frac{1}{2}$ C. -2 D. 2

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

_____ 49. $(-\frac{5}{3}, -1), (-2, \frac{9}{2})$

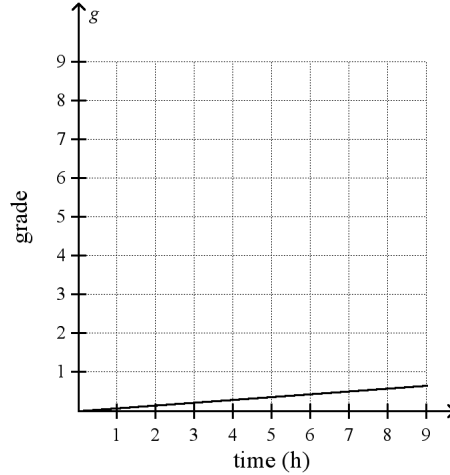
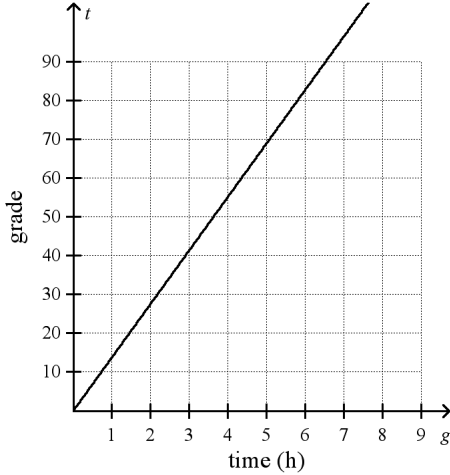
- A. $\frac{2}{33}$ B. $-\frac{2}{33}$ C. $-\frac{33}{2}$ D. $\frac{33}{2}$

Name: _____

_____ 50. The grade a student makes on a test varies directly with the amount of time the student spends studying. Suppose a student spends 5.5 hours studying and makes a grade of 76% on the test. What is an equation that relates the grade earned on a test, g , with the amount of time spent studying, t , in hours? What is the graph of your equation?

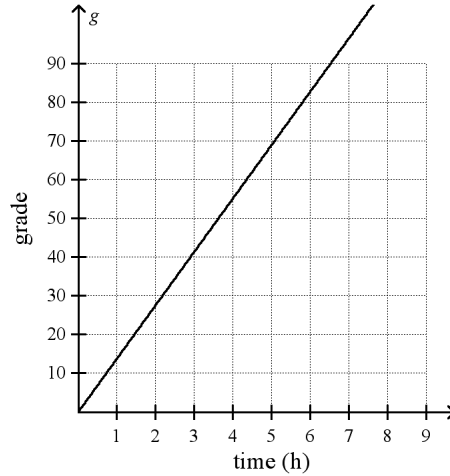
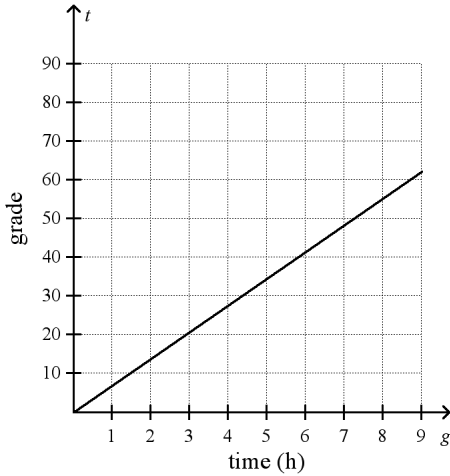
A. $t = 13.82g$

C. $g = 0.07t$



B. $t = 6.91g$

D. $g = 13.82t$



Write an equation of a line with the given slope and y-intercept.

_____ 51. $m = -5$, $b = -3$

A. $y = -5x - 3$

C. $y = 5x - 3$

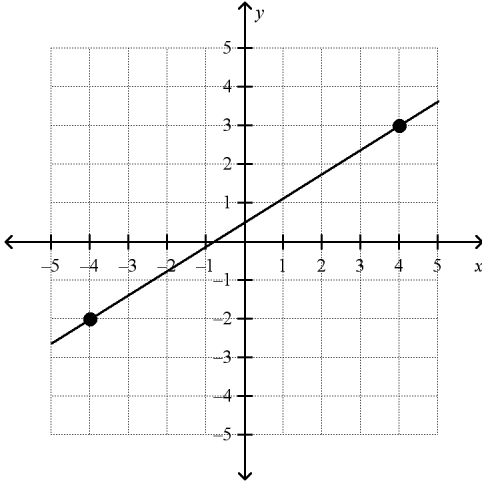
B. $y = -5x + 3$

D. $y = -3x - 5$

Name: _____

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

_____ 52.



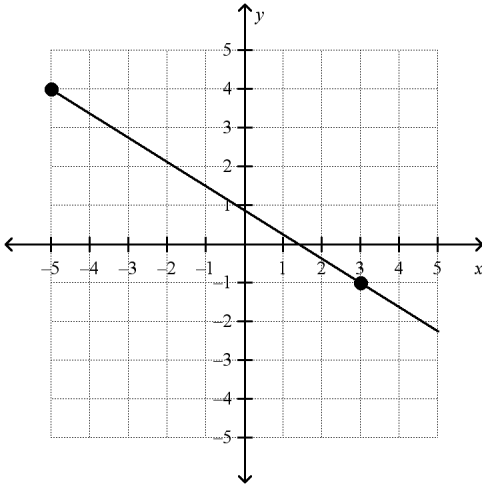
A. $y = -\frac{5}{8}x + \frac{1}{2}$

C. $y = \frac{5}{8}x + \frac{1}{2}$

B. $y = \frac{8}{5}x - \frac{1}{2}$

D. $y = \frac{8}{5}x + \frac{1}{2}$

_____ 53.



A. $y = -\frac{5}{8}x + \frac{7}{8}$

C. $y = \frac{7}{8}x + \frac{5}{8}$

B. $y = \frac{5}{8}x + \frac{7}{8}$

D. $y = -\frac{8}{5}x + \frac{7}{8}$

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

_____ 54. (2, 5), (9, 2)

A. $y = \frac{3}{7}x - \frac{41}{7}$

C. $y = \frac{7}{3}x + \frac{41}{7}$

B. $y = -\frac{7}{3}x - \frac{41}{7}$

D. $y = -\frac{3}{7}x + \frac{41}{7}$

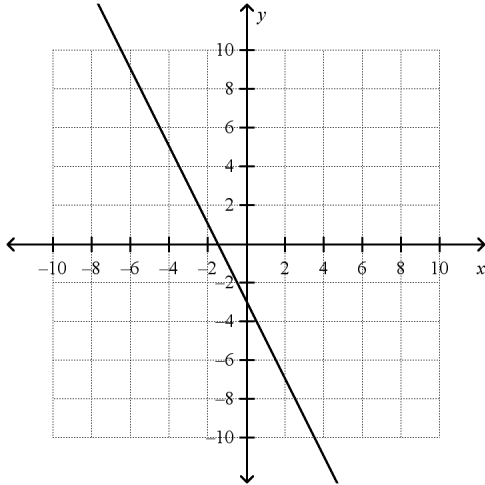
Name: _____

- _____ 55. $(6.6, -2.5), (8.6, -10.5)$
A. $y = 4x + 23.9$
B. $y = -0.25x - 23.9$

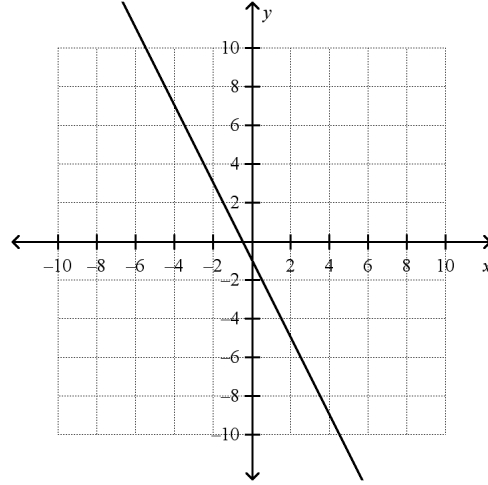
- C. $y = -4x + 23.9$
D. $y = 0.25x - 23.9$

Graph the equation.

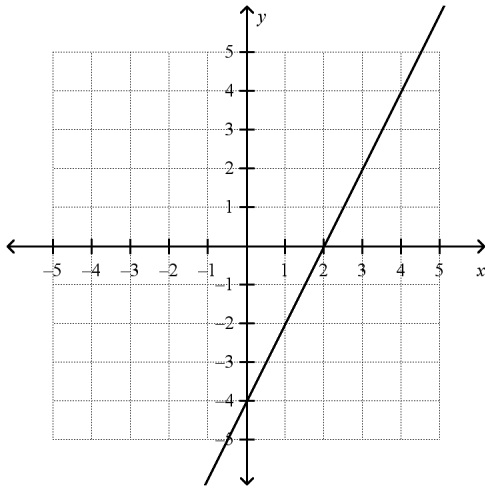
- _____ 56. $y = -2x - 3$
A.



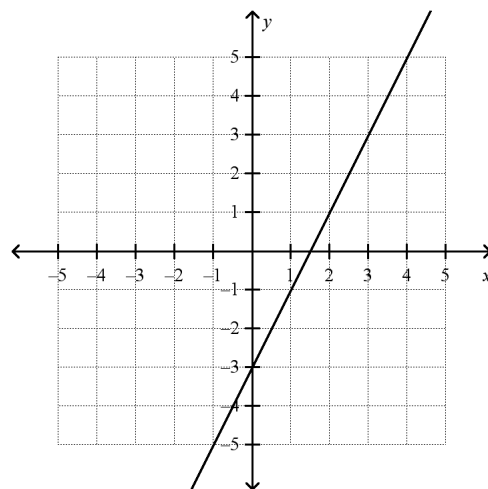
C.



B.



D.



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

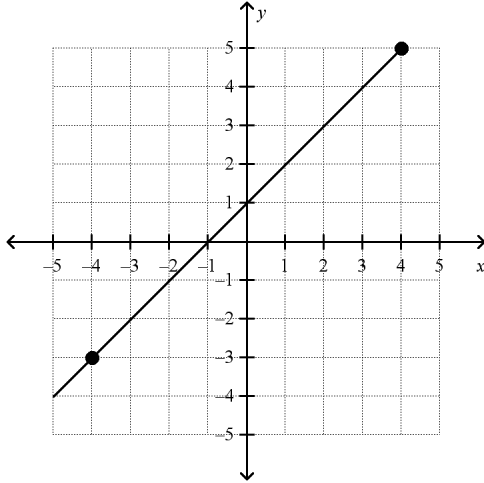
- _____ 57. $(8, 3); m = 6$
A. $y + 3 = 6(x - 8)$
B. $y - 3 = 6(x - 8)$

- C. $y - 3 = 6(x + 8)$
D. $y + 3 = 6x + 8$

Name: _____

What is an equation of the line?

_____ 58.



- A. $y + 3 = (x + 4)$ C. $y + 3 = -(x - 4)$
B. $y - 3 = 2(x - 4)$ D. $y + 5 = 2(x + 4)$

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

_____ 59. $-4x + 2y = 24$

- A. x-intercept is -6 ; y-intercept is 12 C. x-intercept is -4 ; y-intercept is 2
B. x-intercept is 12 ; y-intercept is -6 D. x-intercept is 2 ; y-intercept is -4

_____ 60. $-2.9x + 5.4y = 140.94$

- A. x-intercept is 26.1 ; y-intercept is -48.6 C. x-intercept is -2.9 ; y-intercept is 5.4
B. x-intercept is -48.6 ; y-intercept is 26.1 D. x-intercept is 5.4 ; y-intercept is -2.9

_____ 61. Write $y = 0.2x - 0.3$ in standard form using integers.

- A. $2x + 10y = -3$ C. $-2x + 10y = -3$
B. $-2x - 10y = -3$ D. $2x - 10y = -3$

Write an equation for the line that is parallel to the given line and passes through the given point.

_____ 62. $y = 5x + 8$; $(2, 16)$

- A. $y = 5x - 78$ C. $y = -\frac{1}{5}x - 6$
B. $y = 5x + 6$ D. $y = \frac{1}{5}x + 6$

Name: _____

Write the equation of a line that is perpendicular to the given line and that passes through the given point.

_____ 63. $x + 3y = 16$; $(-3, -4)$

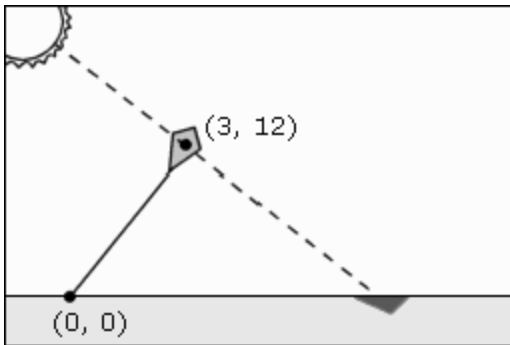
A. $y = 3x + 5$

C. $y = \frac{1}{3}x + 5$

B. $y = \frac{1}{3}x + 9$

D. $y = -3x + 5$

- _____ 64. A kite is tied to the ground. The rays from the sun hit the kite perpendicular to the kite string, casting a shadow of the kite on the ground. The coordinates in the diagram are given in feet. What is the distance from where the kite is tied to the shadow?



- A. 51 ft
B. 36 ft

- C. 103 ft
D. 12.75 ft

- _____ 65. 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.

- A. 1 month
B. 3 months

- C. 2 months
D. 33 months

- _____ 66. Sharon has some one-dollar bills and some five-dollar bills. She has 14 bills. The value of the bills is \$30. Solve a system of equations using elimination to find how many of each kind of bill she has.

- A. 4 five-dollar bills, 10 one-dollar bills
B. 3 five-dollar bills, 15 one-dollar bills

- C. 5 five-dollar bills, 5 one-dollar bills
D. 5 five-dollar bills, 9 one-dollar bills

Simplify the difference.

_____ 67. $(4w^2 - 7w - 6) - (8w^2 + 2w - 3)$

- A. $-4w^2 - 9w - 3$
B. $12w^2 + 9w + 3$

- C. $-4w^2 - 5w - 9$
D. $12w^2 - 5w - 9$

What is a simpler form of each product?

_____ 68. $(2x - 6)^2$

- A. $4x^2 - 24x + 36$
B. $4x^2 - 8x + 36$

- C. $4x^2 + 36$
D. $4x^2 - 12x + 36$

Name: _____

- _____ 69. The area of a rectangular garden is given by the trinomial $x^2 + x - 42$. What are the possible dimensions of the rectangle? Use factoring.
- A. $x - 6$ and $x + 7$ C. $x - 6$ and $x - 7$
B. $x + 6$ and $x - 7$ D. $x + 6$ and $x + 7$

What is the solution of the equation?

- _____ 70. $70 = -7(-2 - 2z)$
- A. 4 B. -28 C. -112 D. 784
- _____ 71. $\frac{3p}{5} + \frac{8}{5} = 1$
- A. 15 B. 2 C. -10 D. -1

What is the solution of the equation?

- _____ 72. $3p - 1 = 5(p - 1) - 2(7 - 2p)$
- A. 3 B. 0 C. -9 D. -10
- _____ 73. $5(10x - 10) = -5(-4x + 4)$
- A. 1 B. -1 C. 0 D. 2
- _____ 74. $-6p + 7 = 3(2p - 3) - 4(-10 + 4p)$
- A. $p = 6$ B. $p = 5$ C. $p = 7$ D. $p = 12$
- _____ 75. What equation do you get when you solve $z - m = z + bx$ for x ?
- A. $x = -\frac{2z + m}{b}$ C. $x = -\frac{m}{b}$
B. $x = -\frac{b}{m}$ D. $x = \frac{2z - m}{b}$
- _____ 76. What is the height of a triangle that has an area of 60 yd^2 and a base with a length of 12 yd?
- A. 0.1 yd C. 5 yd
B. 2.5 yd D. 10 yd
- _____ 77. A flock of Canadian geese migrated 1623 miles in 28 days. What was the average rate at which these geese traveled in miles per day?
- A. 73 miles per day C. 47 miles per day
B. 113 miles per day D. 58 miles per day
- _____ 78. Lenny runs a 100-meter course in 25 seconds. Gary runs a 450-meter course in 112.5 seconds. Bruford runs a 950-meter course in 237.5 seconds. Which athlete is the fastest? Round each speed to one decimal place.
- A. Lenny is the fastest.
B. Gary is the fastest.
C. Bruford is the fastest.
D. They each travel at the same average speed.

Name: _____

What is the solution of the proportion?

_____ 79. $\frac{14}{12} = \frac{d}{48}$

- A. 56
B. 672

- C. 168
D. 576

What is the solution of the proportion?

_____ 80. $\frac{10}{8} = \frac{25}{x}$

- A. 200

- B. 20

- C. 31.3

- D. 3.2

What is the solution of the proportion?

_____ 81. $\frac{x-8}{5} = \frac{2}{4}$

- A. $\frac{9}{2}$

- B. $\frac{5}{2}$

- C. $\frac{21}{2}$

- D. 18

_____ 82. $\frac{w+14}{4w+6} = \frac{3}{4}$

- A. $\frac{8}{19}$

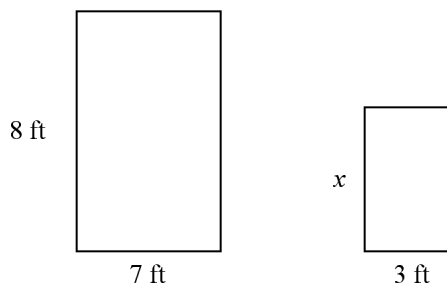
- B. $\frac{15}{28}$

- C. $\frac{19}{4}$

- D. $\frac{2}{7}$

In the diagram, the figures are similar. What is x ?

_____ 83.



Drawing not to scale

- A. 3.4 ft

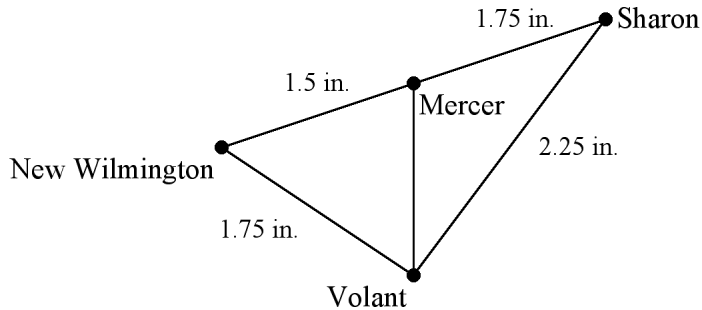
- B. 0.4 ft

- C. 2.3 ft

- D. 2.6 ft

Name: _____

Use the scale and map measurements to find the actual distance from New Wilmington to Sharon through the specified town.



Scale 1 in. : 12 mi

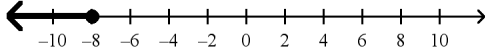
- _____ 84. What is the actual distance from New Wilmington to Sharon through Mercer?
- | | |
|------------|------------|
| A. 78 mi | C. 58.5 mi |
| B. 19.5 mi | D. 39 mi |
- _____ 85. What is the actual distance from New Wilmington to Sharon through Volant?
- | | |
|----------|----------|
| A. 96 mi | C. 48 mi |
| B. 72 mi | D. 24 mi |
- _____ 86. 125% of what number is 264?
- | | |
|---------|----------|
| A. 21.1 | C. 211.2 |
| B. 2112 | D. 2.1 |
- _____ 87. You deposited \$8500 dollars in a savings account that earns a simple interest rate. What interest rate do you need to be paid, if you require \$10093.75 after 5 years.
- | | |
|----------|----------|
| A. 3.75% | C. 4.25% |
| B. 4% | D. 3.5% |

Name: _____

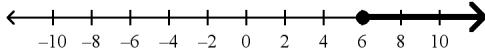
What are the solutions of the inequality? Graph and check the solutions.

_____ 88. $-\frac{x}{4} \leq 2$

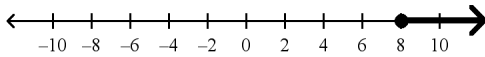
A. $x \leq -8$



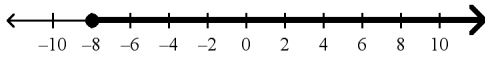
B. $x \leq 6$



C. $x \geq 8$



D. $x \geq -8$



What are the solutions of the inequality? Check the solutions.

_____ 89. $4x + 6 < -6$

A. $x < -3$

B. $x > -3$

C. $x > -6$

D. $x < +6$

Which is a solution of the inequality?

_____ 90. $p + 4 - 2(p - 10) > 0$

A. 29

B. 26

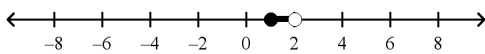
C. 24

D. 22

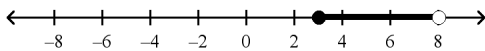
What are the solutions of the compound inequality? Graph the solutions.

_____ 91. $-2 \leq 2x - 4 < 8$

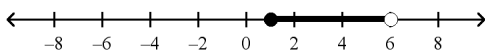
A. $1 \leq x < 2$



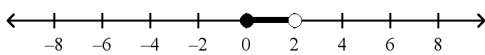
B. $3 \leq x < 8$



C. $1 \leq x < 6$



D. $0 \leq x < 2$

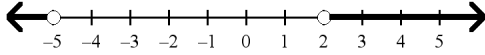


Name: _____

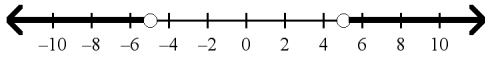
What are the solutions of the compound inequality? Graph the solutions.

_____ 92. $2x - 2 < -12$ or $2x + 3 > 7$

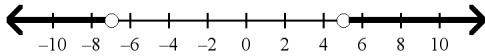
A. $x < -5$ or $x > 2$



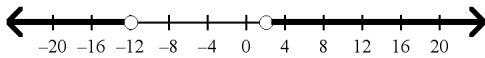
B. $x < -5$ or $x > 5$



C. $x < -7$ or $x > 5$



D. $x < -12$ or $x > 2$



Short Answer--Complete the problems **SHOWING ALL WORK!!** Circle your answer(s).

Simplify each expression.

93. $-|19|$

What is the solution of the system? Use substitution.

94. $3y = -\frac{1}{2}x + 2$

$y = -x + 9$

Name: _____

What is the solution of the system? Use substitution.

95. $2x - y = -7$
 $4x - y = -4$

What is the solution of the system? Use elimination.

96. $2x - 2y = -8$
 $x + 2y = -1$

What is the solution of the system? Use elimination.

97. $x + 3y = 13$
 $5x + 6y = 38$

What is the factored form of the following expressions?

98. $d^2 + 16d + 63$

Name: _____

99. $x^2 - x - 42$

What is the factored form of the expression?

100. $10x^2 + 31x + 15$