

Geometry Accelerated Summer Assignment

Name _____

Show work for each problem Do not use a calculator.

Simplify.

1) $7a^4 \cdot 8a^5$

1) _____

2) $(x^8y^5)(x^7y^6)$

2) _____

3) $\frac{-20x^7y^8}{-4x^5y^4}$

3) _____

Simplify. Write the answer using positive exponents only.

4) $(4mn^5)^3$

4) _____

Express the number in scientific notation.

5) 29,000,000

5) _____

6) 0.000000038101

6) _____

Convert to decimal notation.

7) 1.179×10^7

7) _____

8) 8.648×10^{-6}

8) _____

Calculate.

9) $7 \cdot 4^2 + 5 \cdot 6 - 3(7 + 1)$

9) _____

10) $\frac{8(8 - 6 \cancel{2} - 8 \cdot 9 + 7 \cdot 16)}{71 + 12^0}$

10) _____

11) $4096 \div 16 \cdot 16 \div 4 \cdot 65,536$

11) _____

Perform the indicated operations and simplify.

12) $(2x^2 + 11xy - 10) + (3x^2 - 4x + 2) + (-x^2 - y - 4)$

12) _____

13) $(2x^2 + 5x - x^3 + 1) - (9x^2 - 8x - x^3 + 7)$

13) _____

Multiply and simplify.

14) $(4a + 5c)(4a - 5c)$

14) _____

15) $(x + 3)(x - 3)$

15) _____

16) $(x - 7)(x + 7)(x^2 + 49)$

16) _____

17) $(w - 2)^2$

17) _____

18) $(7y - 9)(49y^2 + 63y + 81)$

18) _____

Factor out a common factor.

19) $2x^4 - 12x^2$

19) _____

Factor the trinomial.

20) $x^2 - x - 56$

20) _____

21) $x^2 + 5xy - 14y^2$

21) _____

Factor.

22) $x^2 - 2x - 120$

22) _____

23) $12x^2 + 17x + 6$

23) _____

24) $5x^2 - 24x - 36$

24) _____

25) $49x^2 - 16$

25) _____

26) $r^2 + 6r + 9$

26) _____

Factor.

27) $4x^2 + 20x + 25$

27) _____

28) $6x^2 - 26x - 20$

28) _____

29) $25x^2 - 36$

29) _____

Perform the indicated operation and simplify.

30) $\frac{5p-5}{p} \cdot \frac{8p^2}{9p-9}$

30) _____

31) $\frac{k^2 + 12k + 35}{k^2 + 14k + 49} \cdot \frac{k^2 + 7k}{k^2 + 3k - 10}$

31) _____

$$32) \frac{x^2 - y^2}{(x + y)^2} \cdot \frac{x + y}{x - y}$$

32) _____

$$33) \frac{4m}{m - 5} - \frac{20}{m - 5}$$

33) _____

$$34) \frac{3}{2 - y} - \frac{7}{y - 2}$$

34) _____

Simplify.

$$35) \frac{\frac{2}{x} + \frac{3}{y}}{\frac{3}{x} - \frac{2}{y}}$$

35) _____

Perform the indicated operations and simplify.

$$36) \frac{3}{x - 6} - \frac{x}{x - 8} + \frac{x^2 + 24}{x^2 - 14x + 48}$$

36) _____

Simplify.

37) $\sqrt{252}$

37) _____

38) $\sqrt{45}$

38) _____

39) $\sqrt{180}$

39) _____

Simplify. Assume that no radicands were formed by raising negative quantities to even powers.

40) $9\sqrt{8} + 8\sqrt{8}$

40) _____

41) $6\sqrt{7} - 15\sqrt{7}$

41) _____

42) $-9\sqrt{2} - 9\sqrt{8}$

42) _____

43) $2\sqrt{162} - 5\sqrt{98}$

43) _____

44) $(\sqrt{10} + \sqrt{8})(\sqrt{10} - \sqrt{8})$

44) _____

45) $(7\sqrt{7} + 10\sqrt{5})(8\sqrt{7} + 4\sqrt{5})$

45) _____

46) $(\sqrt{5} - 5)(\sqrt{3} - 2)$

46) _____

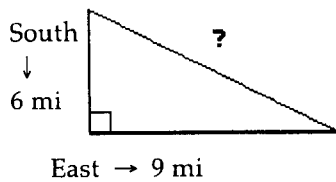
47) $(9 + \sqrt{6})^2$

47) _____

Solve.

- 48) A boat travels 6 miles south and then 9 miles east. How far is the boat from its starting point?

48) _____



Rationalize the denominator.

49) $\sqrt{\frac{64}{11}}$

49) _____

50) $\sqrt{\frac{3}{11}}$

50) _____

Solve.

51) $-6a + 3 + 7a = 14 - 25$

51) _____

52) $14(2c - 9) = 5c - 2$

52) _____

53) $3x + 5(3x - 7) = -14 - 3x$

53) _____

54) $a^2 - 12a + 32 = 0$

54) _____

55) $(2x + 1)(2x + 3) = 0$

55) _____

56) $5x^2 = 15x$

56) _____

57) $5x^2 = 65$

57) _____

58) $2z^2 + 2 = 452$

58) _____

59) $x^2 - 10x + 25 = 9$

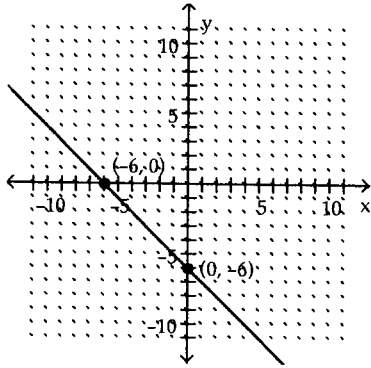
59) _____

60) $x^2 + 10x + 25 = 13$

60) _____

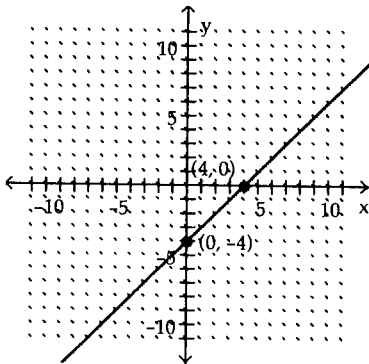
Find the slope of the line.

61)



61)

62)



62)

Find the slope of the line containing the given points.

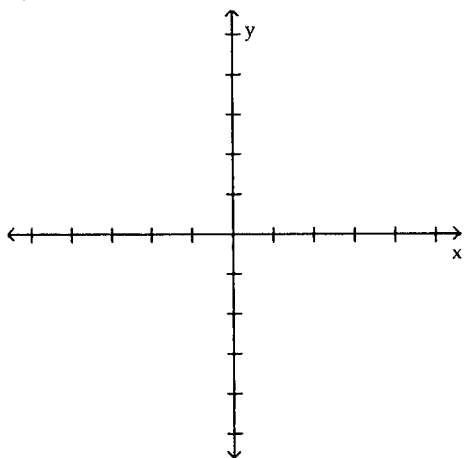
63) (9, 4) and (9, 7)

63) _____

Graph and find the x-intercept of the function.

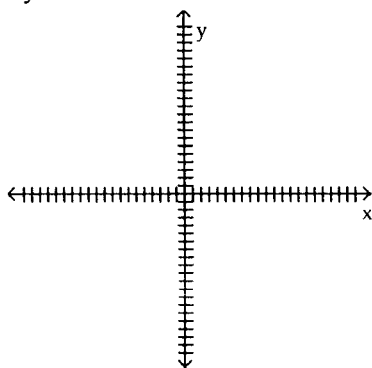
64) $y = 3x + 4$

64)



65) $y = 16x - 15$

65)



Write a slope-intercept equation for a line with the given characteristics.

66) $m = \frac{7}{9}$, passes through $(-5, 6)$

66) _____

67) Passes through $(-3, -2)$ and $(4, -9)$

67) _____

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

$$\begin{aligned} 68) \quad & 3x - 2y = -13 \\ & 2x + 3y = -13 \end{aligned}$$

68) _____

Solve.

$$69) \quad |x| = 9$$

69) _____

$$70) \quad |b + 3| + 5 = 7$$

70) _____

Solve and express solution set using inequalities.

$$71) \quad x + 2 < 12x - 5$$

71) _____

$$72) \quad 2x - 2 + 2x \geq 1 - 11x - 6$$

72) _____

$$73) \quad -\frac{5}{6}x \leq \frac{3}{4} + \frac{10}{3}x$$

73) _____

74) $-2 < -2z \leq 6$

74) _____

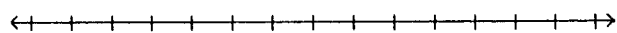
75) $-5x + 1 \geq 11$ or $7x + 3 \geq -25$

75) _____

Solve the inequality and graph the solution set.

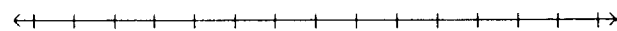
76) $|r + 3| > 2$

76)



77) $|2x + 1| \leq 11$

77)



Solve.

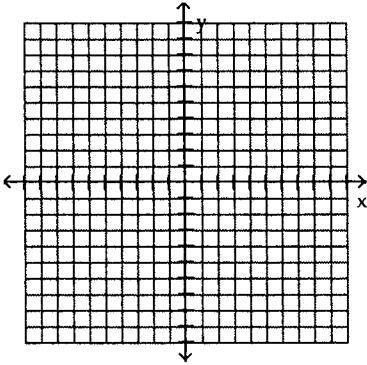
78) $|5x - 6| \geq 9$

78) _____

Solve graphically.

79) $4x + y = -8$
 $6x + 3y = -6$

79)



Solve using the substitution method.

80) $x + y = 5$
 $x - y = 9$

80) _____

81) $x + 4y = 1$
 $-2x + 4y = 22$

81) _____

Solve using the elimination method.

82) $x - 7y = -21$
 $3x - 6y = -18$

82) _____

83) $5x + 9y = 63$
 $-3x + 2y = 14$

83) _____

84) $0.5x + 0.3y = -0.7$
 $x - 0.4y = -2.4$

84) _____

85) What is the distance between the points (2, 5) and (7, 8)?

85) _____

86) Find the distance between the points (4, 3) and (-1, 5). Round your answer to the nearest tenth.

86) _____

87) Find the midpoint of (-1, -5) and (-17, 11).

87) _____

88) What is the midpoint of line segment with endpoints (5, 6) and (-2, -6)?

88) _____

89) Solve the proportion $\frac{5}{x-1} = \frac{7}{x}$.

89) _____

$$90) \quad -\frac{1}{x} + \frac{2}{6x} = -2$$

90) _____

$$91) \quad \frac{x-7}{x+5} = \frac{x-6}{x+4}$$

91) _____

$$92) \quad \frac{1}{x-3} = \frac{1}{3x}$$

92) _____

$$93) \quad \frac{3}{x-4} = \frac{7}{x}$$

93) _____

- 94) A garden will be placed along a wall. 25 ft of fencing will be used for the other three sides. What should the length and width of the garden be if the area is to be 75 square feet?

94) _____

- 95) A national forest service wanted to estimate the number of deer in a particular national park. They caught and tagged 51 deer and released them back into the park. Later they selected a sample of 286 deer. Of the 286 deer, 22 were tagged. Assuming that the proportion of tagged deer in the sample holds for all deer in the forest, what is the best estimate of the number of deer in the park?

95) _____

- 96) Randy drove from his home to Dallas at an average speed of 50 mph. On the return trip, he drove at an average speed of 55 mph. The return trip took Randy 1 hour less than the trip to Dallas. Write an algebraic equation to model this problem and then determine how many total hours he traveled?

96) _____

- 97) Sam has 24 video cassettes, which is 8 more than 4 times the number of cassettes in Minnie's collection. Write an equation to represent this relationship and then determine how many video cassettes Minnie owns?

97) _____

- 98) Write an algebraic equation to find three consecutive integers whose sum is 312, and then solve it.

98) _____

- 99) Suppose you are fencing a rectangular dog pen with 100 ft of fencing. The pen is to be 10 feet longer than it is wide. What are the dimensions of the pen?

99) _____

- 100) A rectangular field has an area of 10 square meters. If its length is one meter less than 3 times its width, what are its dimensions?

100) _____