

Name _____

Geometry Honors
Summer Work

[Note: All work should be done on these worksheets in the space provided.]

Simplify each product. Write in standard form.

1. $(x+6)(x+3)$

2. $(3x-7)(x+4)$

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

Factor each expression. Write each answer in standard form.

4. $10x+30$

5. $5x^3-15x^2+20x$

Factor each expression.

6. $x^2+5x-36$

7. $n^2+22n+21$

Factor each expression.

8. $a^2 - 14a - 32$

9. $x^2 - 25$

10. $x^2 - 13x + 30$

11. $y^2 + 9y + 18$

12. $5x^2 - 16x + 12$

13. $3y^2 + 14y + 15$

14. $6x^2 + 23x + 20$

15. $2x^2 + x - 10$

Solve each of the following systems of equations.

$$16. \begin{cases} y = 2x + 11 \\ y = -x + 5 \end{cases}$$

$$17. \begin{cases} y = x - 7 \\ 2x + y = 8 \end{cases}$$

$$18. \begin{cases} 5x + 7y = 77 \\ 5x + 3y = 53 \end{cases}$$

$$19. \begin{cases} 3x + 6y = 6 \\ 2x - 3y = 4 \end{cases}$$

Solve each of the following systems of equations.

$$20. \begin{cases} 2x + 8y = -42 \\ -x + 8y = -63 \end{cases}$$

$$21. \begin{cases} 5x + 7y = -1 \\ 4x - 2y = 22 \end{cases}$$

Solve the following equations for x . Show all your work to receive full credit.

$$22. 3x + 5 = 15$$

$$23. 3(x + 5) = 15$$

$$24. 2x + 1 - 4x + 19 = 24$$

Solve the following equations for x . Show all your work to receive full credit.

25. $4x + 16 = 6x - 20$

26. $\left(\frac{4}{3}x + 10\right) = 20$

27. $\frac{3}{5}x + \frac{4}{5}x = 30$

28. $6x + 18 = 50$

29. $5x + 10 - 2x = 100$

30. $-2(4x + 3) - 4(3x) = 32$

31. $3x - 2x + 5 - 8x = 40$

32. $\frac{x}{3} - 4 = 12$

33. $(3x + 2) - 4(3x + 2) = x$

Simplify the following. Put in simplest radical form. NO DECIMALS!

34. $\sqrt{45}$

35. $\sqrt{120}$

36. $\sqrt{128}$

37. $\sqrt{12x^3y^2}$

38. $\sqrt{412m^6}$

39. $\sqrt{640x^7y^5}$

Write the equation of a line given the following information.

40. $m = 3, b = -2$

41. slope = $\frac{2}{5}$, y -intercept = 4

Write the equation of a line given the following information.

42. $(2, -6), (-1, 5)$

43. $(-1, -6), (2, -3)$

44. $(4, 3), (-1, -2)$

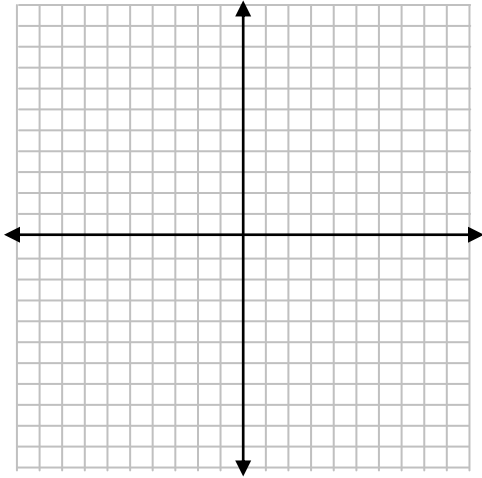
45. $(2, 3), (2, 7)$

46. $(0, 0), (1, -1)$

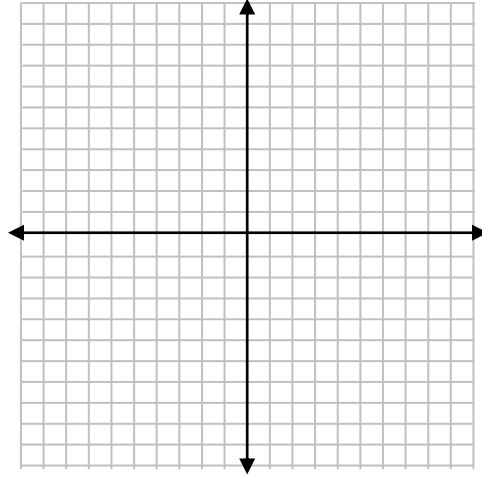
47. $(6, -2), (-3, -2)$

Graph the following equations on the graph provided.

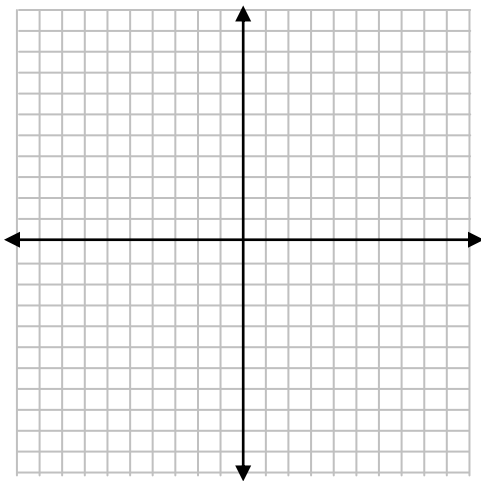
48. $y = 2x + 5$



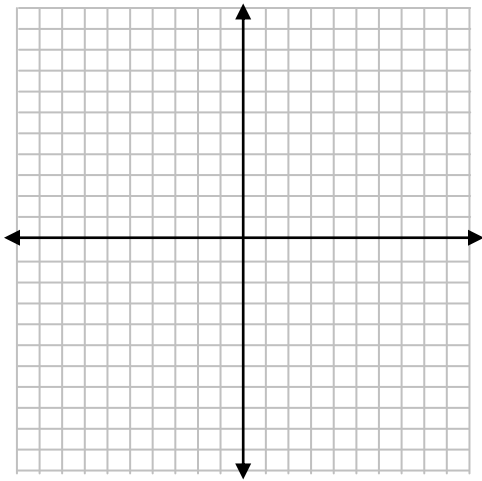
49. $y = -\frac{3}{2}x - 2$



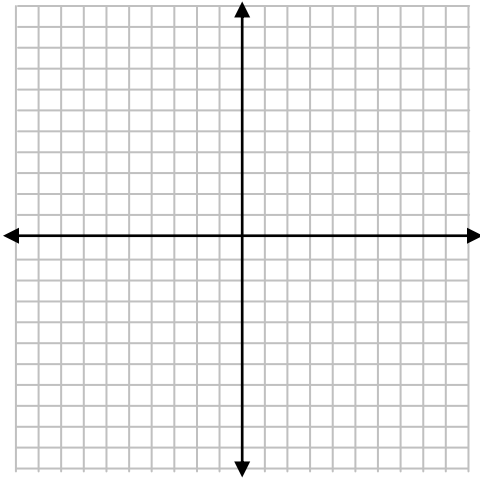
50. $y = -2x$



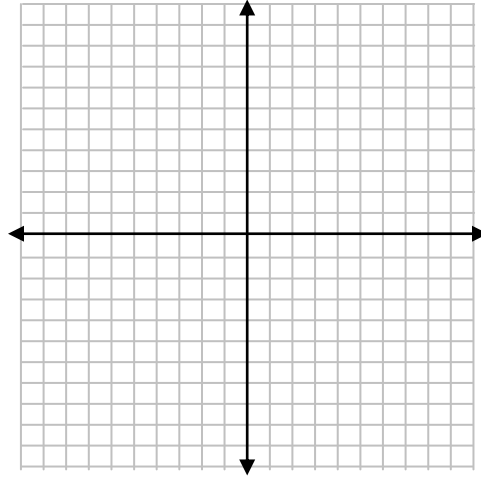
51. $2x + 4y = 8$



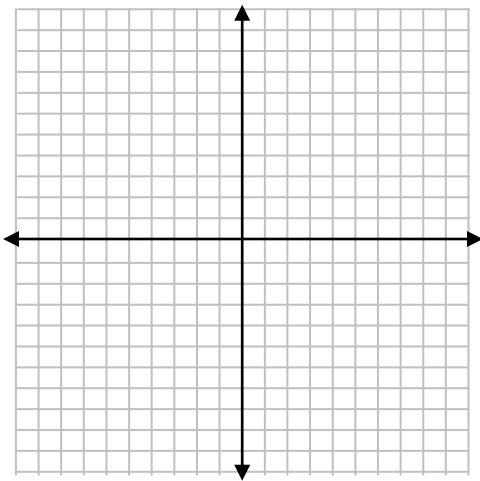
52. $x + 3y = 15$



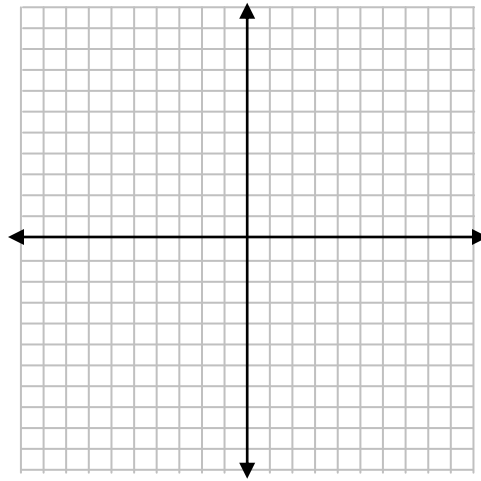
53. $x = 6$



54. $y = \frac{3}{7}x - 5$



55. $y = 5$



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

56. $y = -2x + 3; (-3, 5)$

57. $y = -\frac{2}{3}x + 12; (5, -3)$

58. $-6x + y = -2; (0, 0)$

59. $y = 7; (2, -3)$

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

60. $y = 2x + 7; (0, 0)$

61. $y = \frac{1}{2}x + 3; (2, 4)$

62. $4x - 2y = 10; (-1, -7)$

63. $x = -4; (-1, 6)$

Find all values of x in the following equations.

64. $169 = 25 + x^2$

65. $576 = x^2 - 100$

66. $x^2 - 9 = 36$

Solve the following equations.

67. $x^2 - 7x + 12 = 0$

68. $x^2 + 3x = 4$

69. $x^2 + 2x - 3 = 0$

70. $-2x^2 + 3x + 1 = 0$

71. $x^2 + 2x = -1$

72. $x^2 + 18x - 63 = 0$

Solve the following equations:

$$73. \frac{5}{10} = \frac{x}{16}$$

$$74. \frac{1}{x+1} = \frac{2}{3x}$$

$$75. \frac{x-3}{7} = \frac{x}{14}$$

$$76. \frac{2x+5}{3} = \frac{15}{x-5}$$

$$77. \frac{15}{x} = \frac{x}{5}$$

$$78. \frac{7}{x+1} = \frac{x-1}{5}$$

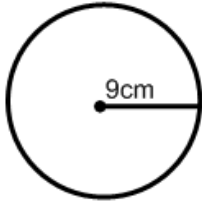
$$79. \frac{63}{\pi r^2} = \frac{1}{5}$$

$$80. \frac{15}{45x} = \frac{1}{12}$$

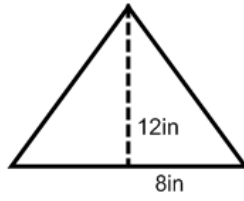
$$81. \frac{\sqrt{12}}{x+5} = \frac{x}{\sqrt{3}}$$

Find the Area of the following:

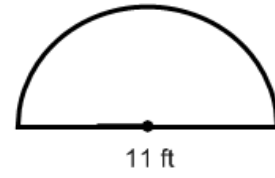
82.



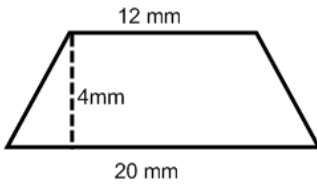
83.



84.



85.

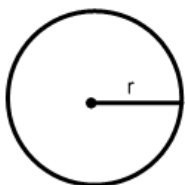


86.



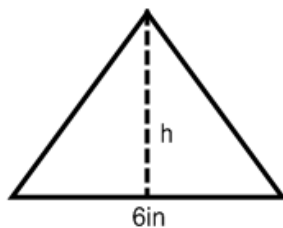
Find the variable in each of the following:

87.



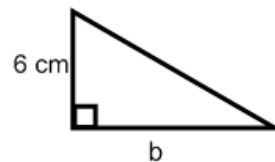
circumference = 16π cm²

88.



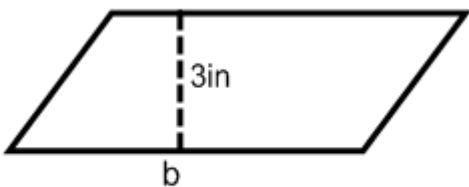
Area = 24in^2

89.



Area = 24cm^2

90.



Area = 36in^2

91.



Area = 72mm^2