

Name _____



Welcome to Geometry!

You are about to embark on the next journey in your educational career. We are looking forward to a year-long adventure with you in Geometry. There is a team of teachers for the 2018-2019 school year that teach this class.

You can find your summer assignment on the Norwalk High School website.

This packet contains topics that you are expected to know prior to entering Geometry. You have learned these skills over the past few years. These examples focus on both mathematical skills and problem solving. This packet should be completed independently. **You are to complete this assignment in pencil and show all work.**

If you are having a difficult time completing this assignment there are a wide variety of resources that you can use during the summer to help complete the assignment. i.e. Khan Academy, Purple Math, ...

The summer packet is due the first day of class. Your first test of the school year will be on the topics that you are expected to know entering Geometry.

For the 2018-2019 school you will be required to have the following supplies.

1. TI-84 Graphing Calculator or TI-84 CE.
2. 3 ring binder
3. 3 separators
4. Pencils
5. College ruled paper
6. Colored Pencils
7. Red pen



Enjoy your summer and we can't wait to meet you in August.

Determine whether a point is on a line

Determine if the given point is a solution to the equation.

1. $y = 2x + 4$; (3, 10)

2. $y = \frac{3}{4}x - 4$; (-4, 7)

3. $y = \frac{1}{2}x - 8$; (4, -6)

4. $y = -8x - 10$; (-2, -26)

5. $y = \frac{5}{8}x + 12$; (16, 22)

6. $y = \frac{3}{2}x + 4$; (3, $\frac{17}{2}$)

Slope

Find the slope of the line that passes through the two points.

7. (2, 5) and (3, 8)

8. (-6, -1) and (2, 4)

9. (1, -5) and (1, 9)

10. (-4, 6) and (5, 6)

11. (-2, -3) and (-4, -5)

12. (3, 5) and (6, -7)

Writing equations of lines

Write the equation of the line given a point and the y-intercept.

13. $(2, 5)$; $b = 4$

14. $(-2, 7)$; $b = -2$

15. $(-5, -2)$; $b = 8$

16. $(4, -6)$; $b = 0$

17. $(5, 0)$; $b = -3$

18. $(1, 4)$; $b = 4$

Writing equations of lines

Write the equation of the line given two points.

19. $(-7, 4)$ and $(1, 2)$

20. $(-2, 0)$ and $(-6, -4)$

21. $(3, -4)$ and $(-4, 0)$

22. $(1, 7)$ and $(-5, 7)$

23. $(1, 7)$ and $(-2, -2)$

24. $(-2, 8)$ and $(-2, -3)$

Distance Formula

Find the distance between the two points. Round answers to two decimal places.

25. $(-7, 4)$ and $(1, 2)$

26. $(-2, 0)$ and $(-6, -4)$

27. $(3, -4)$ and $(-4, 0)$

28. $(1, 7)$ and $(-5, 7)$

29. $(1, 7)$ and $(-2, -2)$

30. $(-2, 8)$ and $(-2, -3)$

Combining like terms

Simplify the expressions.

31. $7a - 2b - 3a + 4b$

32. $-3z - 8x - 6z - 12x$

33. $2x^2 + 4xy + 5x^2 - 2y$

34. $9p + 4t - t - 3p$

35. $3a^2 + 5ab + 2a^2 + ab$

36. $2r - 3s + 4r - 7s$

Solving equations with variables on both side of the equation

Solve the equation.

37. $8x - 2 = 12x + 6$

38. $-2y + 4 = 6y$

39. $3z + 2 = 9z - 16$

40. $t + 2 = -t + 12$

41. $6a + 3 = 5a - 6$

42. $3b - 1 = 2b - 1$

Solving inequalities

Solve the inequality.

43. $x + 2 > 5$

44. $-y - 4 \geq 7$

45. $a + 4 < 12$

46. $2x + 3 \leq 9$

47. $-3b - 4 < -16$

48. $7c + 4 \geq 60$

Writing and simplifying ratios

Write and simplify the ratios.

49. John and Kelly were playing homerun derby. John hit 8 homeruns and Kelly hit 6. What is the ratio of John's homeruns to Kelly's?
50. In a science project where the students are growing Pinto Beans, Jessica's bean grew 7 inches in two weeks and Ashley's bean grew 10 inches in two weeks. What is the ratio of the growth of Ashley's bean to Jessica's bean?
51. Malik made 15 free throws and Jason made 10 free throws out of 20. What is the ratio of missed free throws of Malik to Jason?

Solving proportions

Solve the proportions.

$$52. \frac{x}{5} = \frac{20}{4}$$

$$53. \frac{y}{4} = \frac{40}{32}$$

$$54. \frac{5}{12} = \frac{35}{a}$$

$$55. \frac{1-n}{3} = \frac{4n-1}{2}$$

$$56. \frac{9}{8} = \frac{k+6}{6}$$

$$57. \frac{x+5}{2} = \frac{-3}{x}$$

Distributive Property

Solve the equations.

58. $3(x + 4) = 21$

59. $\frac{3}{4}(x - 16) = 3$

60. $-5(-7 + x) = 50$

61. $\frac{1}{2}(x - 4) = 6$

62. $18(x + 2) = 10(x + 6)$

63. $x(x + 1) = 12$

Simplifying Radicals

Simplify the radicals using your calculator. Round your answer to the nearest tenth.

64. $\sqrt{36}$

65. $\sqrt{45}$

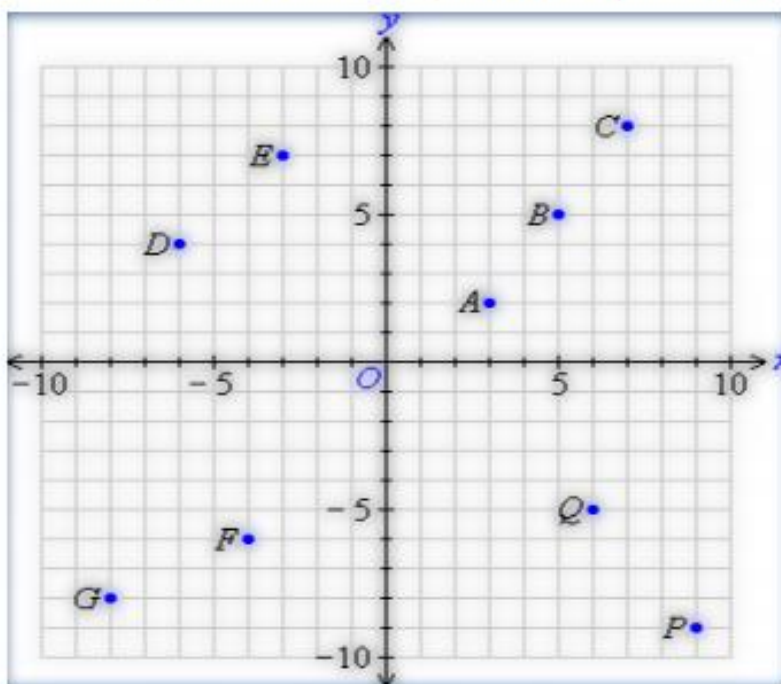
66. $3\sqrt{12}$

67. $\sqrt{75}$

68. $\sqrt{90}$

69. $\sqrt{55}$

Name each of the points below using an ordered pair in the form (x,y)



70) A:

75) F:

71) B:

76) G:

72) C:

77) Q:

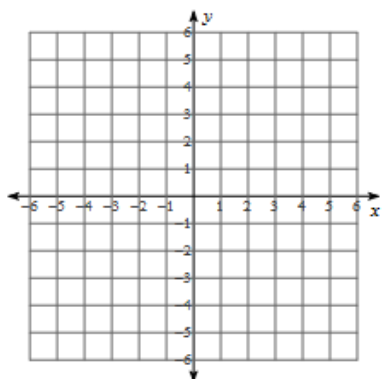
73) D:

78) P:

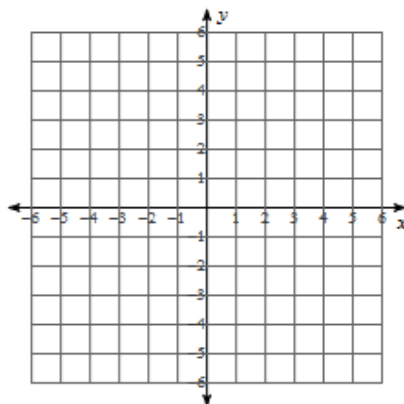
74) E:

Sketch the graph of each line.

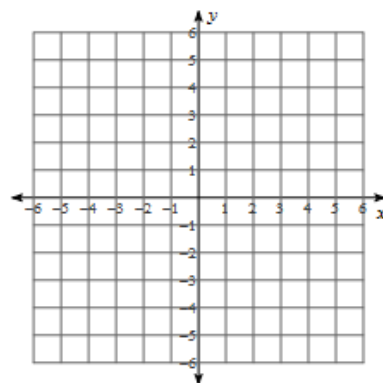
79) $y = \frac{1}{5}x + 1$



80) $y = x - 3$



81) $y = -2$



Solving Formulas for a Variable

Solve the given formula for the specified variable.

82. $A = \frac{1}{2}aP$; P

83. $A = bh$; h

84. $A = \pi r^2$; r

85. $C = 2\pi r$; r

86. $V = lwh$; l

87. $a^2 + b^2 = c^2$; a

Algebraic Expressions

Write the expression and solve for the number.

88. Half of a number plus 4 times the number equals 27.

89. 12 less than 3 times a number equals 18.

90. 2 times a number is 4 times the sum of the number and 6.

91. The square of a number equals the product of 12 and 3.

Percent Problems

92. What is 70% of 240?

93. 15 is 30% of what number?

94. 25 is what percent of 110?

95. What is 20% of 300?

96. 24 is 40% of what number?

97. 18 is what percent of 20?

Simplifying Expressions

Simplify the expressions.

98. $\frac{-40}{8}$

99. $\frac{\frac{3}{2}}{18}$

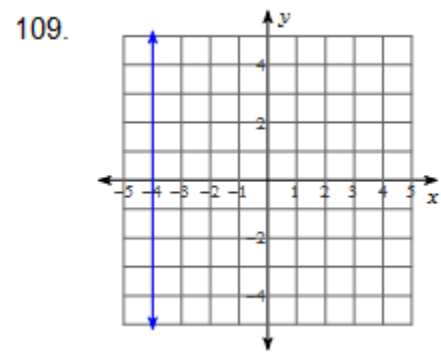
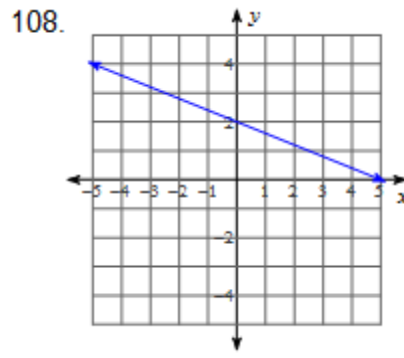
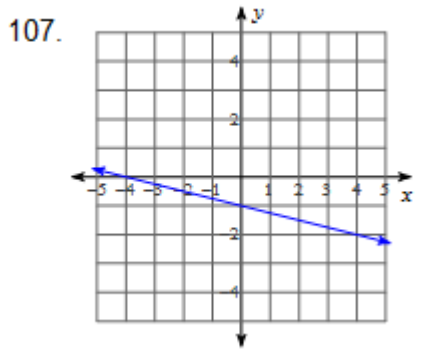
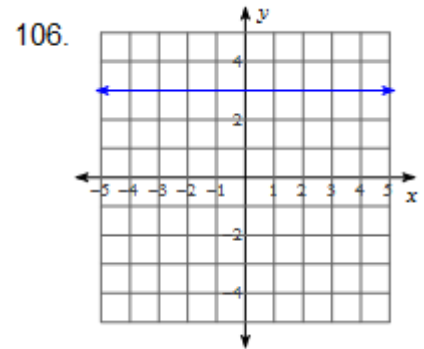
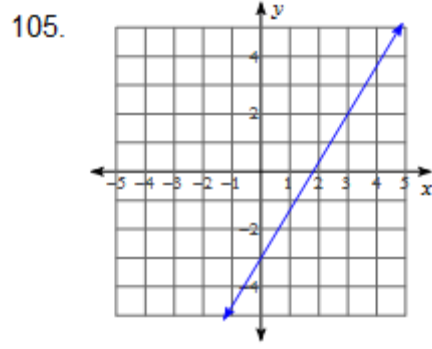
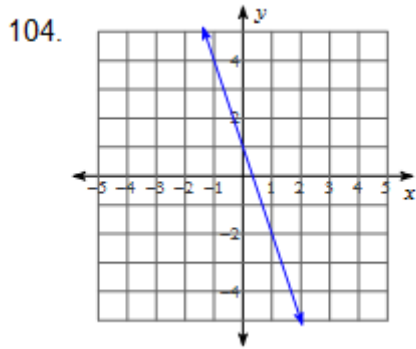
100. $\frac{2}{3} + \frac{3}{4}$

101. $\frac{7}{8} - \frac{1}{3}$

102. $\frac{3}{5} \times 10$

103. $\frac{3}{4} \div \frac{9}{8}$

Write the equation for the given graphs in slope-intercept form.



Write an equation for the line that has the given x-intercept and y-intercept.

110. $(-3,0)$ $(0,7)$

111. $(4,0)$ $(0,8)$

Write the equation of the line parallel to the given line and through the given point.

112. $y = 3x + 4$ through $(6,3)$

113. $y = \frac{1}{2}x$ through $(2,-8)$

Write the equation of the line perpendicular to the given line and through the given point.

114. $y = \frac{-2}{3}x + 5$ through $(0,0)$

115. $y = 5x + 1$ through $(5,-2)$

Systems of Equations

Solve for the value of both variables.

116. $9x - 4y = -78$

$$4x + y = -18$$

117. $2x + 5y = 11$

$$3x - 5y = 4$$

118. $3x + 5y = 12$

$$4x - 3y = -13$$

119. $x + y = -9$

$$x - y = 1$$

120. $3x - 2y = 17$

$$x + 2y = 11$$

121. $2x - 5y = -6$

$$2x - 7y = -14$$

Multiplying Binomials

Multiply the binomials.

122. $(x + 2)(x - 3)$

123. $(x + 4)(x + 6)$

124. $(x - 5)(x - 3)$

125. $(2x + 7)(x - 4)$

126. $(3x + 6)(4x - 3)$

127. $(2x - 5)(5x - 10)$

Factoring Polynomials

Factor the following expressions.

128. $x^2 + 3x + 2$

129. $x^2 + 3x - 10$

130. $x^2 - 9x + 20$

131. $x^2 - 36$

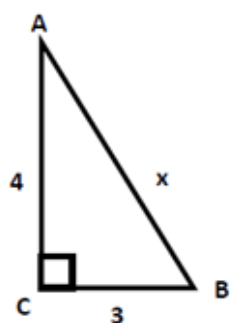
132. $x^2 - 16$

133. $x^2 - 9$

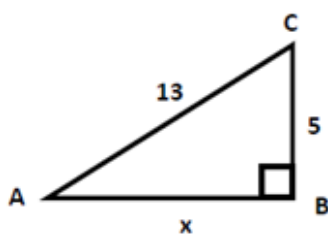
Pythagorean Theorem

Find the value of x .

134.



135.



136.

