

Geometry or Honors Geometry Summer Math Packet

Completion of the summer math packet is a GAC requirement and will serve as preparation for the fall semester. You must show all the work and steps for solving the problems.

Due Date: August 5, 2024

Name: _____

Summer Work Requirements

Resource	Website	What To Do
<p>*Required 100 Summer math packet problems</p>	<p>MyGAC Resource Page - Summer Academics</p>	<p>Turn in completed packet the first day of school.</p>
<p>*Optional IXL Students who are new to GAC should email Mr. Robert Moloney <rmoloney@GAC.org> to set up an IXL account"</p>	<p>https://www.ixl.com/ signin/atlanta</p>	<p>Working 15 minutes a week in the math section helps build math skills.</p>

This Packet is designed to be completed over time and in small chunks. Below is a sample of week's workload:

Monday	Tuesday	Wednesday	Thursday	Friday
10 Problems in the packet	10 minutes iXL	10 Problems in the packet	10 minutes iXL	Off/Optional Work

Show your work for each problem!

Simplify each expression.

1) $-1 - 6(1 + 6x)$

2) $8(7b - 8) + 7b$

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

4) $-8(1 + 8k) + 8k$

5) $8x + 2(x - 8)$

Evaluate each expression.

6) $\frac{18}{6}((-6) - 2)$

7) $\frac{21 + 1 - (-8)}{5}$

8) $\left(-\frac{8}{4}\right)(3 - (-10))$

Evaluate each using the values given.

9) $q + pq + q^2$; use $p = 8$, and $q = -6$

10) $|h| - j(j + 9)$; use $h = 8$, and $j = -6$

11) $\frac{|y - y|}{6} + x$; use $x = 7$, and $y = -7$

Simplify each expression.

12) $4 + 6(n - 2)$

13) $6 - 8(2m - 2)$

14) $7 + 7(3x - 2)$

15) $7x(x + 1) + 6(7 + 7x)$

16) $-6(3x - 7) - (2x + 3)$

17) $-8x(5x + 6) - 5(5x + 8)$

Find the distance between each pair of points.

18) $(-5, -4), (3, -8)$

19) $(-5, -4), (-4, -5)$

Solve each equation.

20) $25 = p + 8$

21) $16n = -16$

22) $m + (-15) = -51$

23) $-36 + k = 31$

24) $x + 5 + 3x = -11$

25) $1 + 6n - 5n = -2$

26) $-3x - 12 = -3(2x - 2)$

27) $-7b - 16 = 3 + 4(-b - 1)$

28) $3(k + 4) + 4 = 24 + 7k$

29) $21 + 5k = 3 - 8(7 + 4k)$

30) $8x = -3(-4 - 2x)$

31) $-3(1 + a) = -2(a + 10)$

32) $-2(1 - 2x) = 8 + 10(x - 7)$

33) $4(12 + n) = 200$

34) $4 - 18n = -32$

Evaluate each expression.

35) $4 - (-7) - (-8) \times 7$

36) $\left(\frac{-14}{-2}\right) - \frac{12}{-3}$

37) $(-9) \times \frac{3}{3} \times 5$

Evaluate each using the values given.

38) $z(|y + 8| + z)$; use $y = -8$, and $z = 2$

39) $-10 + b - b(a - b)$; use $a = 7$, and $b = 7$

Factor each completely.

40) $b^2 + 4b + 3$

41) $x^2 + 6x + 9$

42) $p^2 - 6p + 5$

43) $x^2 + x - 6$

44) $x^2 + 13x + 30$

45) $a^2 - 4a - 21$

46) $x^2 - 14x + 48$

47) $a^2 + 9a + 14$

48) $a^2 - 4a - 12$

49) $v^2 + 3v - 28$

Evaluate each function for the given value.

50) $f(x) = 4x + 6$; Find $f(-2)$

51) $f(x) = -x^2 + 8x - 13$; Find $f(3)$

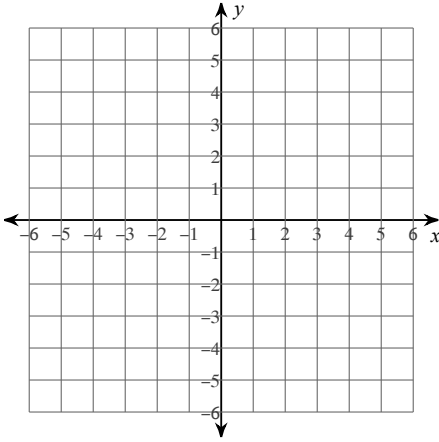
52) $f(x) = x^2 + 4x - 3$; Find $f(-5)$

53) $f(x) = -4x$; Find $f(-2)$

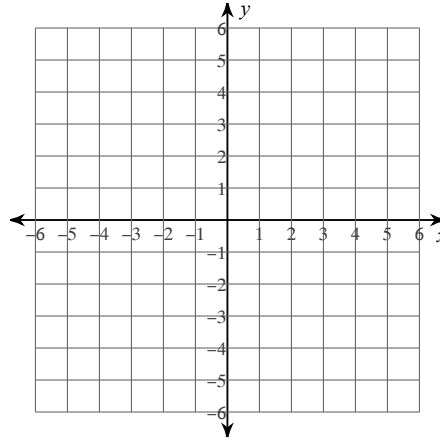
54) $f(x) = -2|x - 5| + 7$; Find $f(7)$

Sketch the graph of each line.

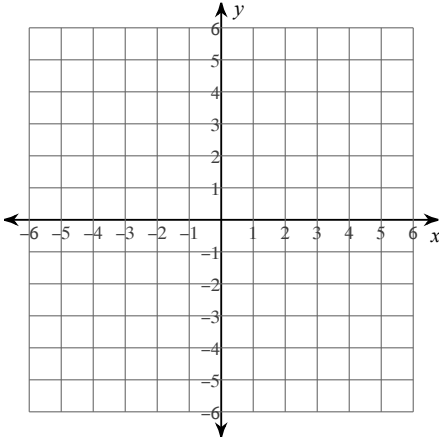
55) x -intercept = 5, y -intercept = -5



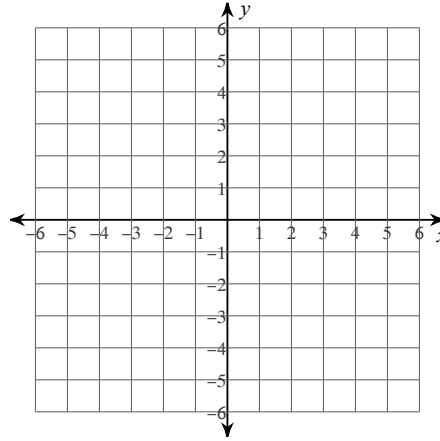
56) x -intercept = 1, y -intercept = -3



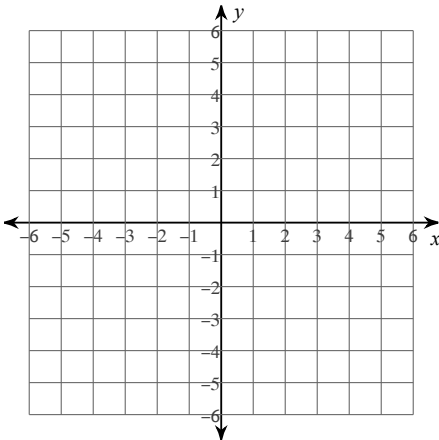
57) x -intercept = -3, y -intercept = 5



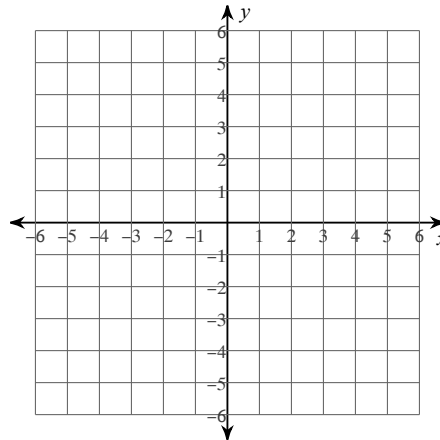
58) x -intercept = 2, y -intercept = -2



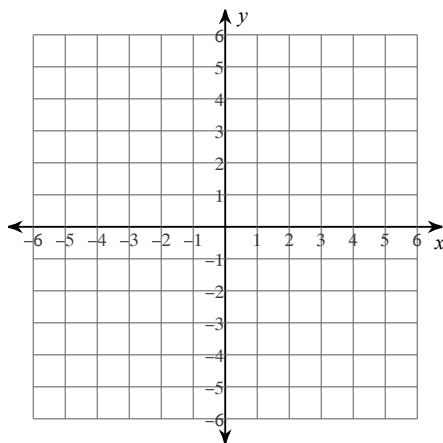
59) x -intercept = -5, y -intercept = 1



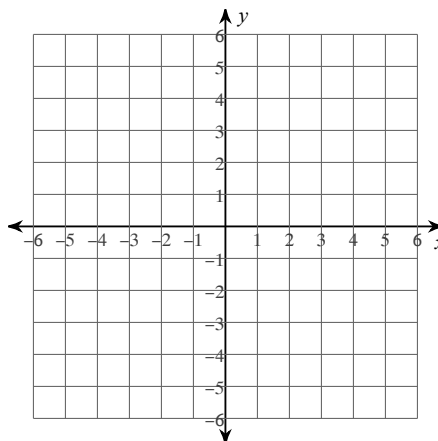
60) $y = 0$



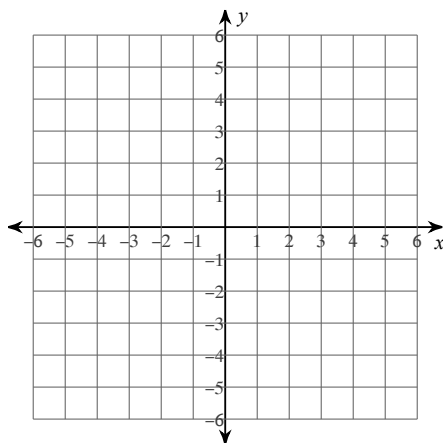
61) $y = 5x - 5$



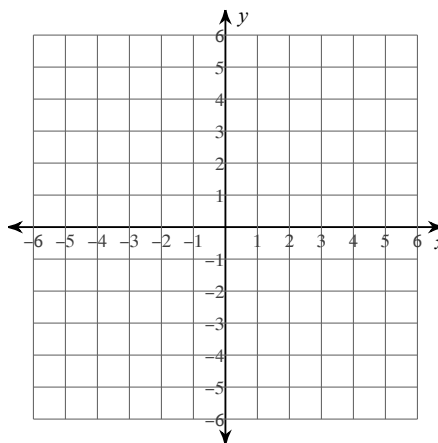
62) $y = -\frac{4}{3}x + 4$



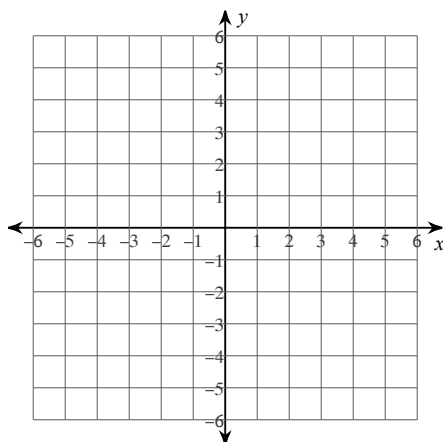
63) $y = 3x - 5$



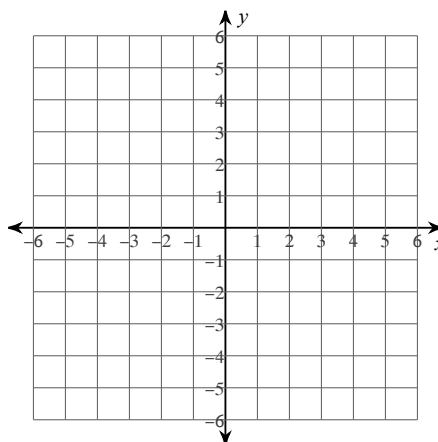
64) $y = x - 3$



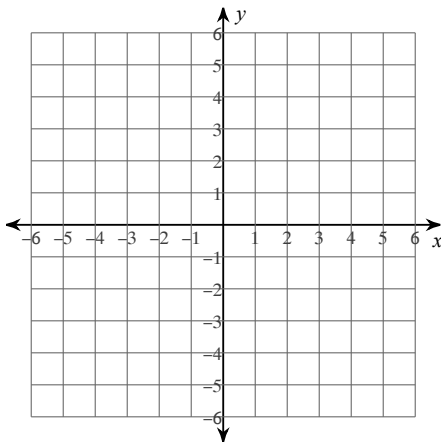
65) $-y + 4 = 0$



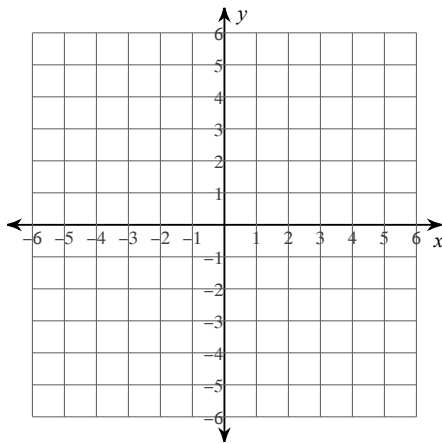
66) $-x = -3y - 9$



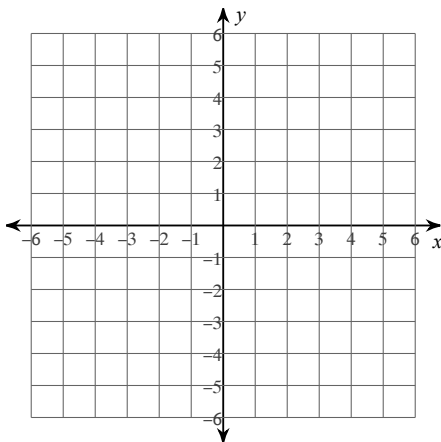
67) $-12 = -3y + x$



68) $x - 6 = -3y$



69) $4 - 2y = 5x$



Solve each system by graphing.

70) $y = x + 2$
 $y = -x + 4$

71) $y = \frac{1}{2}x + 2$
 $y = \frac{7}{2}x - 4$

72) $y = -\frac{1}{4}x + 1$
 $y = -x - 2$

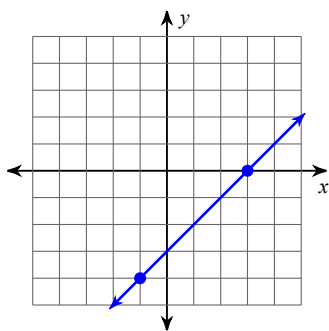
73) $y = \frac{1}{2}x + 1$
 $y = \frac{3}{2}x - 1$

$$74) y = -\frac{1}{3}x + 2$$

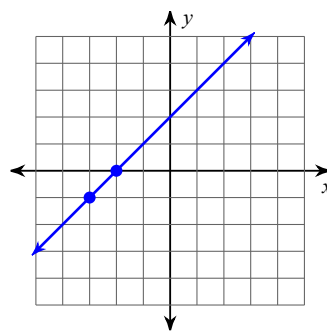
$$y = \frac{1}{3}x + 4$$

Find the slope of each line.

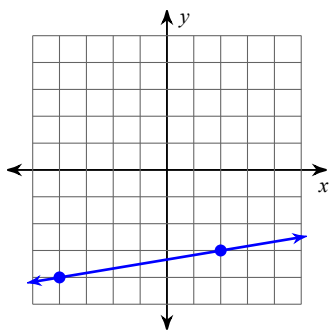
75)



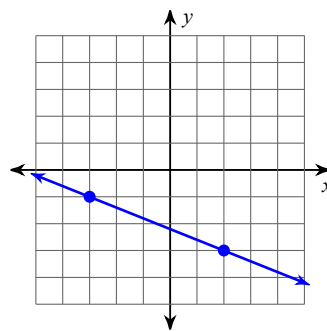
76)



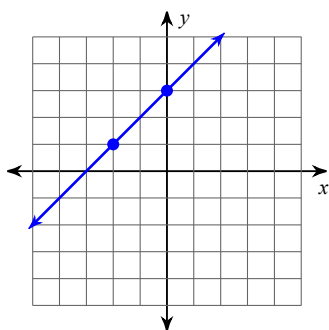
77)



78)

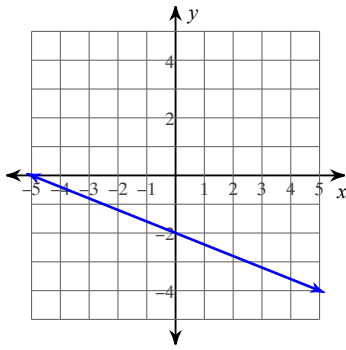


79)

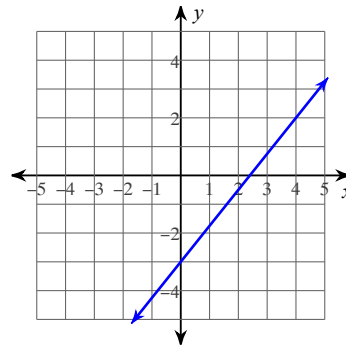


Write the slope-intercept form of the equation of each line.

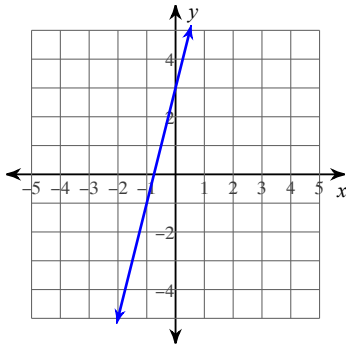
80)



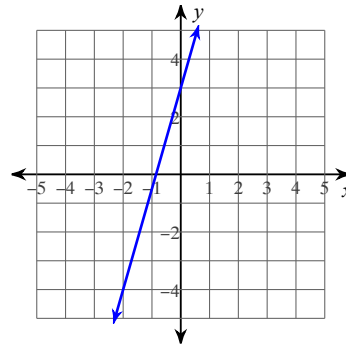
81)



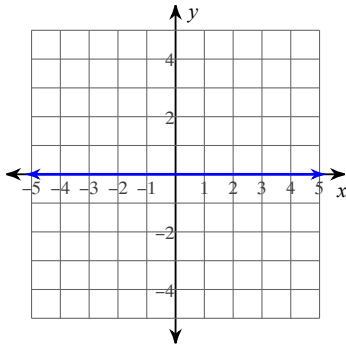
82)



83)



84)



Find the midpoint of the line segment with the given endpoints.

85) $(1, -8)$, $(-4, -5)$

86) $(-8, -4)$, $(-5, 6)$

Find the value of x or y so that the line through the points has the given slope.

87) $(-7, y)$ and $(-5, 3)$; slope: $\frac{7}{2}$

88) $(x, 9)$ and $(-8, -4)$; slope: undefined

89) $(-4, -5)$ and $(x, -8)$; slope: $-\frac{3}{2}$

90) $(5, -7)$ and $(-5, y)$; slope: -1

91) $(-2, -8)$ and $(x, -6)$; slope: -1

92) The senior classes at High School A and High School B planned separate trips to the state fair. The senior class at High School A rented and filled 3 vans and 14 buses with 616 students. High School B rented and filled 6 vans and 7 buses with 371 students. Each van and each bus carried the same number of students. Find the number of students in each van and in each bus.

93) Huong and Jack are selling cookie dough for a school fundraiser. Customers can buy packages of sugar cookie dough and packages of double chocolate cookie dough. Huong sold 7 packages of sugar cookie dough and 9 packages of double chocolate cookie dough for a total of \$186. Jack sold 14 packages of sugar cookie dough and 6 packages of double chocolate cookie dough for a total of \$180. Find the cost each of one package of sugar cookie dough and one package of double chocolate cookie dough.

94) Julio left school and traveled toward the recycling plant at an average speed of 20 km/h. Perry left three hours later and traveled in the same direction but with an average speed of 50 km/h. Find the number of hours Julio traveled before Perry caught up.

95) Jessica left the movie theater one hour before Matt. They traveled in opposite directions. Matt traveled at 40 mph for two hours. After this time they were 275 mi. apart. What was Jessica's speed?

96) Sumalee left the mall and traveled toward the capital at an average speed of 40 km/h. Cody left one hour later and traveled in the opposite direction with an average speed of 70 km/h. How long does Cody need to travel before they are 150 km apart?

97) Find the value of two numbers if their sum is 11 and their difference is 3.

98) Flying to Madrid with a tailwind a plane averaged 315 km/h. On the return trip the plane only averaged 243 km/h while flying back into the same wind. Find the speed of the wind and the speed of the plane in still air.

Find the median and mean for each data set.

