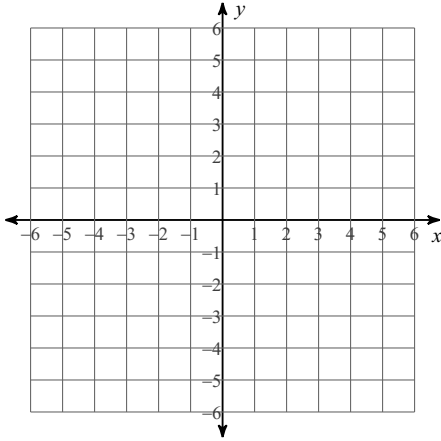


## Review Packet

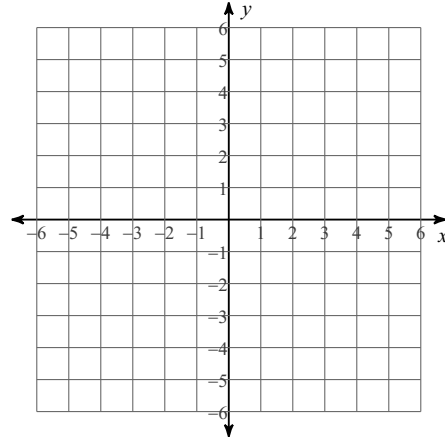
Date \_\_\_\_\_ Period \_\_\_\_\_

Sketch the graph of each line.

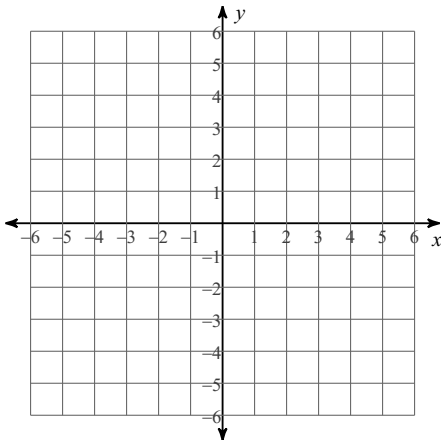
1)  $y = -3x - 5$



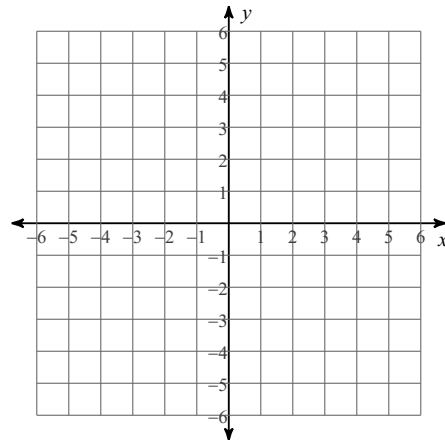
2)  $y = \frac{1}{3}x + 4$



3)  $y = 2$



4)  $7x - 5y = -20$



**Find the slope of the line through the given points.**  $m = \frac{y_2 - y_1}{x_2 - x_1}$

5) through:  $(-1, 1)$  and  $(3, 3)$

6) through:  $(-2, -4)$  and  $(1, -4)$

7) through:  $(-1, 3)$  and  $(4, 1)$

8) through:  $(-2, 3)$  and  $(-2, 1)$

**Write the slope-intercept form ( $y = mx + b$ ) of the equation of each line given the slope and y-intercept.**

9) Slope =  $-3$ , y-intercept =  $5$

10) Slope =  $\frac{1}{2}$ , y-intercept =  $-1$

**Write the point-slope form of the equation of the line through the given point with the given slope.**

11) through:  $(-3, -4)$ , slope =  $\frac{1}{2}$

12) through:  $(5, 1)$ , slope =  $1$

Write the slope-intercept form of the equation of the line through the given point with the given slope.

13) through:  $(5, 0)$ , slope =  $\frac{2}{5}$

14) through:  $(-3, 0)$ , slope =  $\frac{5}{2}$

Write the slope-intercept form of the equation of the line through the given points.

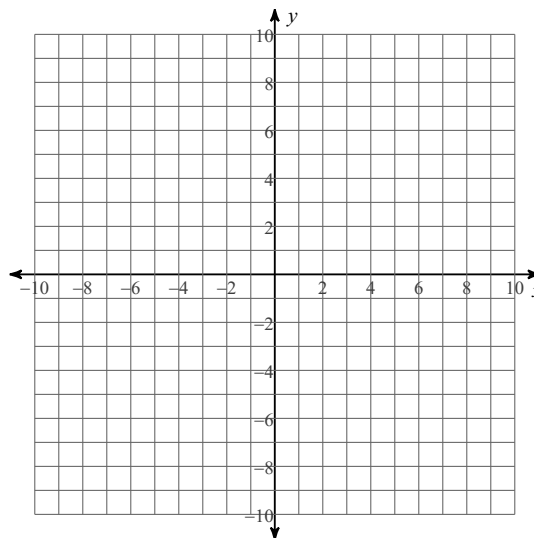
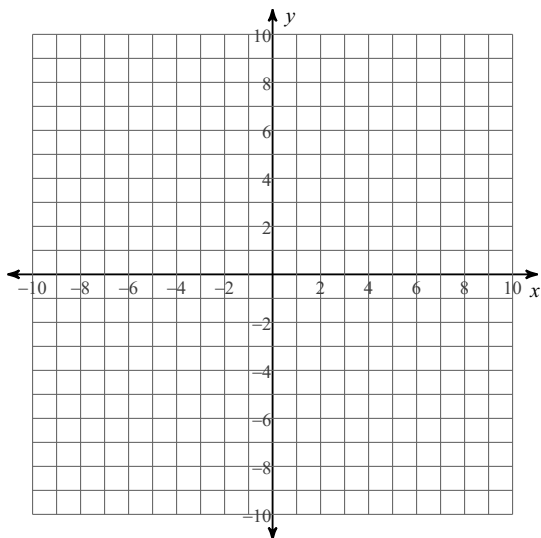
15) through:  $(-1, -3)$  and  $(2, 2)$

16) through:  $(-4, -4)$  and  $(2, -2)$

Solve each system by graphing.

17)  $y = -\frac{4}{5}x - 1$   
 $y = x + 8$

18)  $y = x + 9$   
 $y = -\frac{11}{3}x - 5$



**Solve each system by substitution.**

$$\begin{aligned} 19) \quad & -4x + 5y = 24 \\ & y = 8x - 24 \end{aligned}$$

$$\begin{aligned} 20) \quad & y = 7x + 17 \\ & -5x + 3y = 3 \end{aligned}$$

$$\begin{aligned} 21) \quad & 2x - y = 3 \\ & y = -5x - 17 \end{aligned}$$

$$\begin{aligned} 22) \quad & -7x + 2y = -12 \\ & y = 7x - 6 \end{aligned}$$

**Solve each system by elimination.**

$$\begin{aligned} 23) \quad & -3x + 3y = 21 \\ & 3x + 2y = -21 \end{aligned}$$

$$\begin{aligned} 24) \quad & 9x - 9y = 0 \\ & -9x + 6y = 30 \end{aligned}$$

$$\begin{aligned} 25) \quad & x + 3y = 0 \\ & 4x + 3y = -9 \end{aligned}$$

$$\begin{aligned} 26) \quad & 2x + 10y = 26 \\ & 2x - 4y = -2 \end{aligned}$$

$$\begin{aligned} 27) \quad & 5x - 10y = 0 \\ & 9x - 20y = 10 \end{aligned}$$

$$\begin{aligned} 28) \quad & -x + 4y = -4 \\ & 8x - 3y = -26 \end{aligned}$$

$$\begin{aligned} 29) \quad & -7x - 8y = -18 \\ & 5x + 10y = 30 \end{aligned}$$

$$\begin{aligned} 30) \quad & 3x + 4y = 11 \\ & 2x - 3y = -4 \end{aligned}$$

**Factor each completely. Remember to factor out GCF first!**

$$31) \quad n^3 - 7n^2$$

$$32) \quad n^3 - 5n^2$$

$$33) \quad 6v^3 + 14v^2 - 12v$$

$$34) \quad 7x^2 + 38x + 40$$

$$35) \quad 24a^4 + 54a^3 - 54a^2$$

$$36) \quad 10p^2 + 11p - 6$$

**Tell whether the graph of the quadratic function will open up or down.**

$$37) \quad y = x^2 + 2x - 2$$

$$38) \quad y = \frac{1}{2}x^2 - 4x + 10$$

39)  $y = -2x^2 + 4x - 3$

40)  $y = x^2 - 6x + 6$

**Identify the vertex of each quadratic function. Remember to find the x-value of the vertex, use  $x = -\frac{b}{2a}$ , and then plug back into equation to find y.**

41)  $y = -x^2 - 6x - 12$

42)  $y = x^2 - 8x + 14$

43)  $y = -x^2 + 4x - 3$

44)  $y = x^2 + 8x + 13$

**Identify the form of each quadratic function: standard, vertex, or intercept form.**

45)  $y = -2(x + 2)^2 + 1$

46)  $y = -2x^2 - 8x - 10$

47)  $f(x) = (x + 8)(x - 4)$

48)  $y = x^2 + 4x + 3$

$$49) y = (x - 2)^2 - 2$$

$$50) f(x) = \frac{1}{2}(x + 3)(x - 1)$$

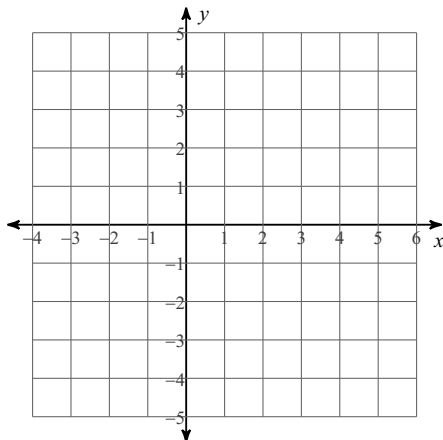
**Identify the vertex of the quadratic function. Remember the vertex of a quadratic function in vertex form is  $(h, k)$ .**

$$51) y = (x - 1)^2 - 3$$

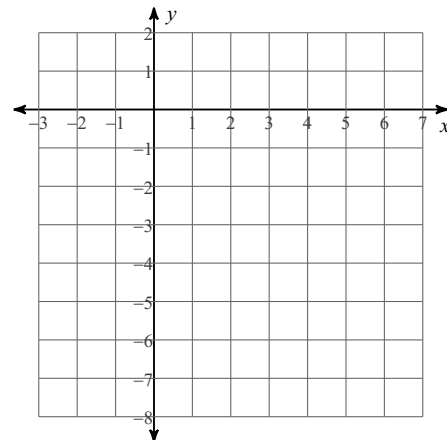
$$52) y = 2(x - 3)^2 + 3$$

**Find the vertex of the quadratic function. Then create a table of values using the vertex as your middle point. Then graph the quadratic function.**

$$53) f(x) = 2x^2 + 4x - 2$$



$$54) f(x) = -2x^2 - 4x - 1$$



**Find the discriminant of each quadratic equation then state the number and type of solutions.**

$$b^2 - 4ac$$

55)  $2n^2 - 4n + 2 = 0$

56)  $-4x^2 + 4x = 0$

57)  $10n^2 + 5n + 6 = 0$

58)  $6r^2 - 8r - 8 = 0$

**Find the discriminant of each quadratic equation then state the number of x-intercepts the graph of the function has.**

59)  $-6m^2 + 10m - 5 = 0$

60)  $-10x^2 + 7x - 1 = 0$

**Find the zeros of the quadratic function. You may use DESMOS. Remember that the zeros are the same as the x-intercepts. Write your answers as ordered pairs.**

61)  $y = 2x^2 - 12x + 14$

62)  $y = -x^2 - 8x - 13$