

Summer Enrichment

Date _____

Evaluate each expression.

1) $\frac{16 - (10 - 6)}{2(5 - 2)^2} - \frac{|2^2 - 10|}{3^2}$

2) $\frac{10}{5} - (-3 + 6) + 5^2$

3) $\frac{-|-4| - (6^2 + 2 - 3^3)}{6} - \frac{9}{3 \cdot 6 - 4^2}$

4) $\frac{16 - (10 - 4)}{|-2 + 4|}$

Evaluate each using the values given.

5) $b - (-2)^2(b + a)$; use $a = 6$, and $b = 6$

6) $k - 6j - |k|$; use $j = 6$, and $k = -1$

Solve each equation.

7) $-6 + 8n = -6(1 + 7n)$

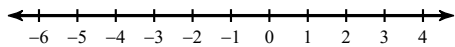
8) $-20 + 5m = -5(m - 2)$

9) $6(x - 2) = 3 + 6(x + 3)$

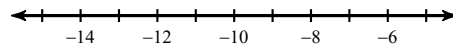
10) $-2(1 - k) - 4(-8 + 2k) = 3k + 6k$

Solve each inequality and graph its solution.

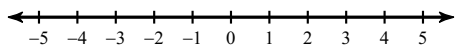
11) $136 \geq -8(2 + 5a) - 8$



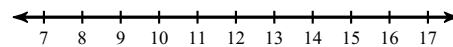
12) $-1 - 4(2b - 6) \leq 87$



13) $2(8r - 4) \geq -6r - (8 + 3r)$

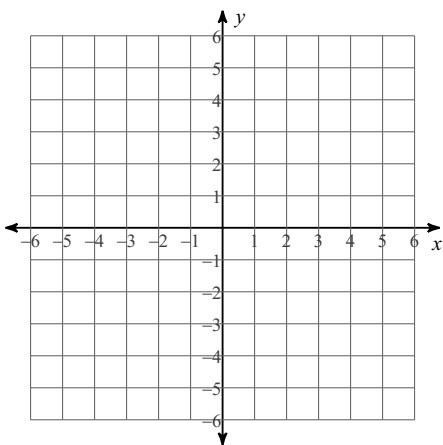


14) $6(5 + 4x) \geq -6(1 - 4x) + 2$

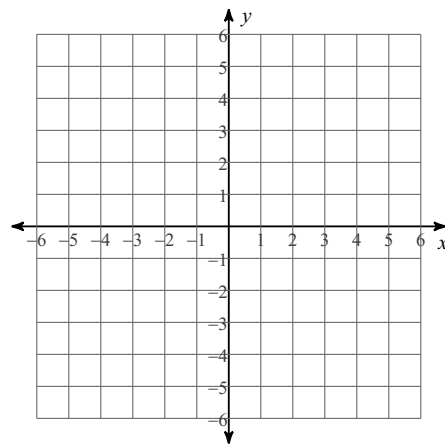


Sketch the graph of each line.

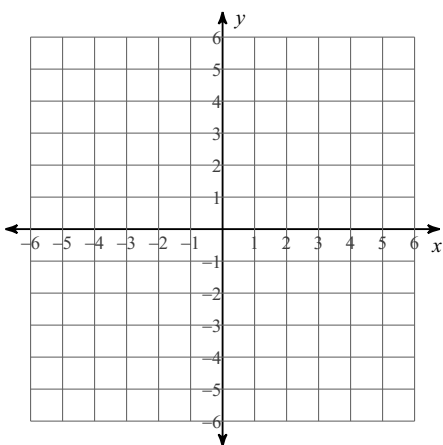
15) $y = -5x + 4$



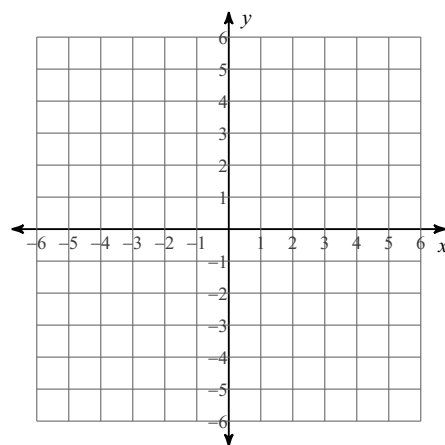
16) $y = -\frac{5}{4}x$



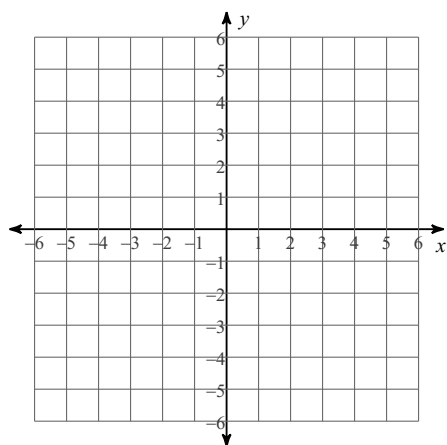
17) $2x - 5y = -10$



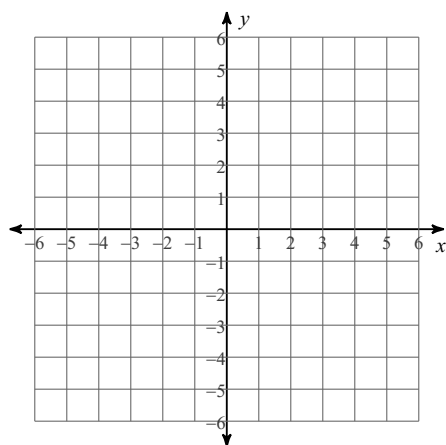
18) $x + y = -3$



19) $0 = -2 - 2y$

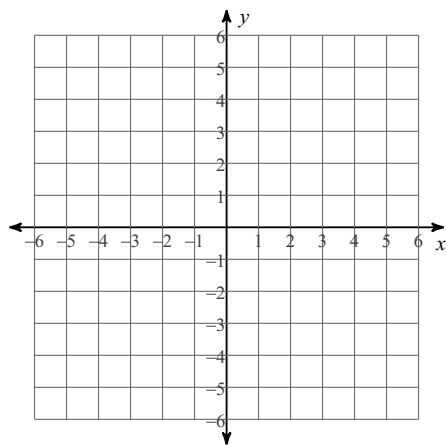


20) $3 + x = 0$

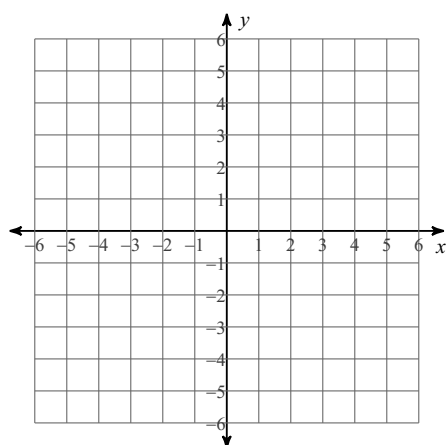


Sketch the graph of each linear inequality.

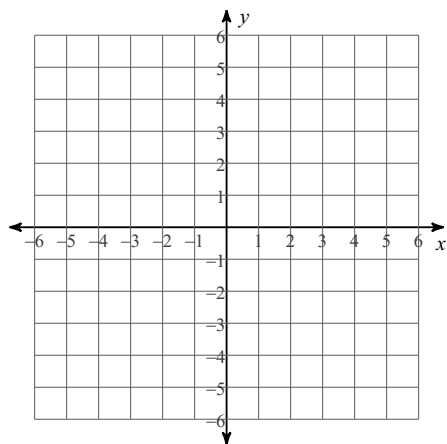
21) $y < -x - 1$



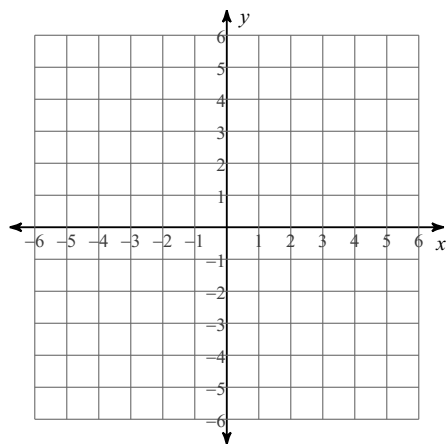
22) $y \leq \frac{2}{5}x$



23) $x - y \leq 4$

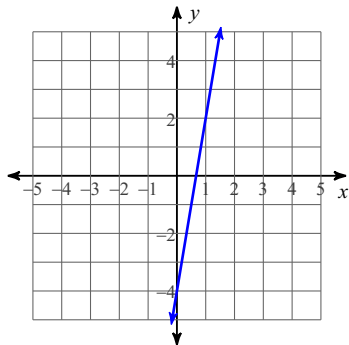


24) $y > -1$

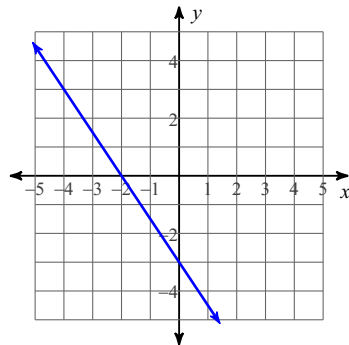


Write the slope-intercept form of the equation of each line.

25)



26)



27) $5x - 14y = 7$

28) $3x + 2y = 0$

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

29) through: $(3, 5)$, slope $= \frac{5}{3}$

30) through: $(2, 0)$, slope $= -2$

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

31) through: $(-4, 5)$ and $(1, 5)$

32) through: $(-5, 4)$ and $(-2, -2)$

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

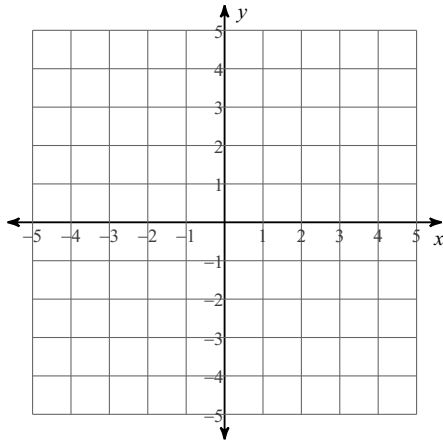
33) through: $(1, 5)$, parallel to $y = -9x - 4$

34) through: $(-2, 4)$, perp. to $y = \frac{2}{9}x - 2$

Solve each system by graphing.

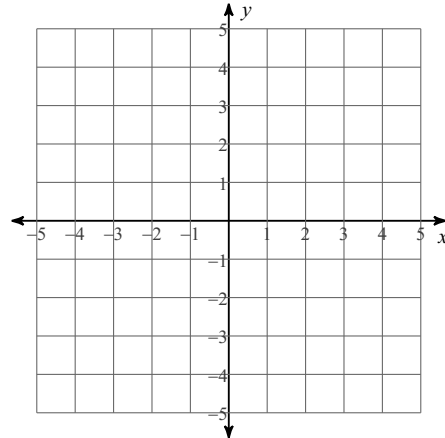
$$35) \ y = -\frac{1}{3}x + 3$$

$$y = -\frac{7}{3}x - 3$$



$$36) \ x - y = 3$$

$$6x - y = -2$$



Solve each system by substitution.

$$37) \ -5x - 7y = -24$$

$$x + 2y = 9$$

$$38) \ 6x + 2y = 0$$

$$3x + y = 0$$

Solve each system by elimination.

$$39) \ 8x - 12y = -8$$

$$-6x + 9y = 12$$

$$40) \ -3x + 7y = -30$$

$$2x - 5y = 21$$

- 41) Perry and Ryan are selling fruit for a school fundraiser. Customers can buy small boxes of oranges and large boxes of oranges. Perry sold 10 small boxes of oranges and 14 large boxes of oranges for a total of \$220. Ryan sold 12 small boxes of oranges and 3 large boxes of oranges for a total of \$126. What is the cost each of one small box of oranges and one large box of oranges?

42) Eugene's school is selling tickets to a play. On the first day of ticket sales the school sold 3 adult tickets and 12 child tickets for a total of \$93. The school took in \$59 on the second day by selling 8 adult tickets and 5 child tickets. What is the price each of one adult ticket and one child ticket?

43) Matt and Gabriella each improved their yards by planting daylilies and geraniums. They bought their supplies from the same store. Matt spent \$90 on 12 daylilies and 6 geraniums. Gabriella spent \$33 on 3 daylilies and 3 geraniums. What is the cost of one daylily and the cost of one geranium?

Solve each equation by factoring.

44) $(x - 6)(x + 7) = 0$

45) $(2k - 7)(k + 8) = 0$

46) $x^2 + 3x - 10 = 0$

47) $n^2 + 4n - 5 = 0$

48) $2x^2 - 12x + 18 = 0$

49) $7p^2 + 63p + 140 = 0$

50) $3b^2 - 5b - 28 = 0$

51) $7v^2 + 27v - 4 = 0$

52) $18n^2 - 12n - 96 = 0$

53) $15x^2 + 3x = 0$

Solve each equation with the quadratic formula.

54) $k^2 - 10k + 8 = 0$

55) $11x^2 + 4x - 11 = 0$

56) $8v^2 - 4v + 1 = 0$

57) $-4n^2 + 6n + 4 = 0$

Solve each equation.

58) $-8|2 + b| + 8 = -80$

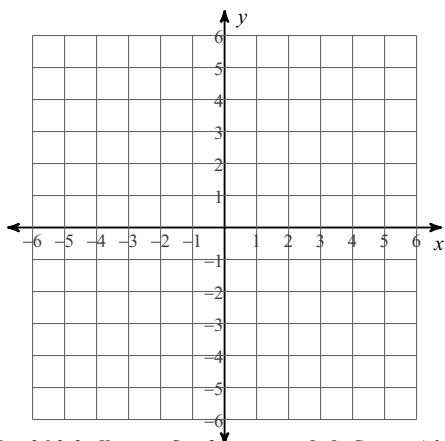
59) $-3|-10 + v| - 10 = -43$

60) $10|m - 2| - 1 = -61$

61) $8 + 4|x - 10| = 8$

Graph each equation.

62) $y = 2|x - 4| - 2$



63) $y = -2|x - 3| + 2$

