

Solve each equation.

19)  $24a - 22 = -4(1 - 6a)$

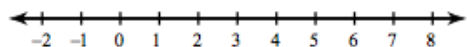
20)  $-5(1 - 5x) + 5(-8x - 2) = -4x - 8x$

12)  $\frac{11}{6} = \frac{1}{3} + p$

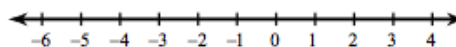
21)  $\frac{1}{3} = n + \frac{4}{3}$

Solve each inequality and graph its solution.

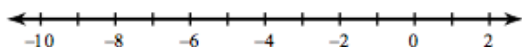
2)  $-1 + r \geq 4$



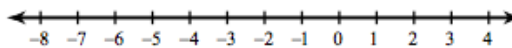
16)  $32 \geq -16p$



5)  $-3 \leq \frac{p}{2} < 0$

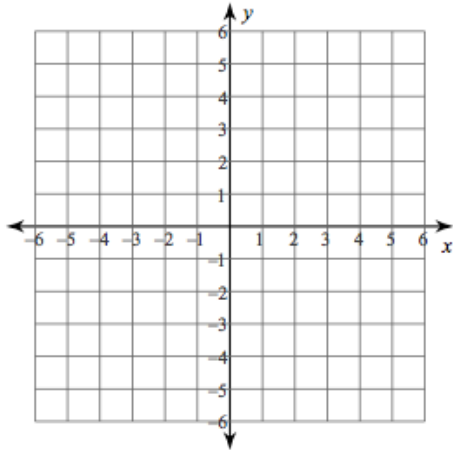


8)  $|10 + 4x| < 14$

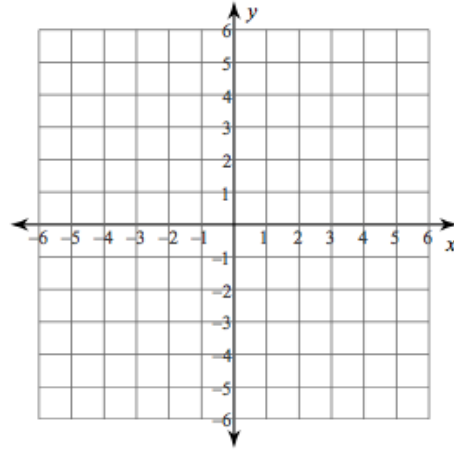


Sketch the graph of each linear inequality, or linear equation.

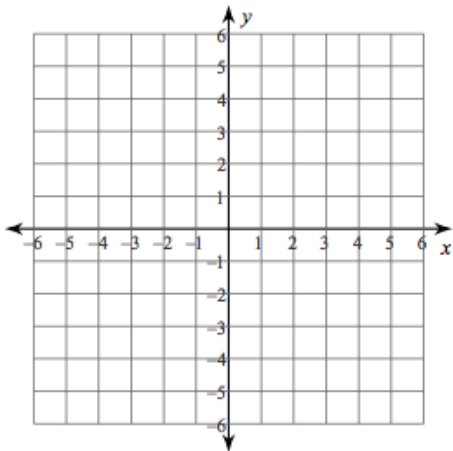
2)  $y \leq \frac{3}{5}x - 5$



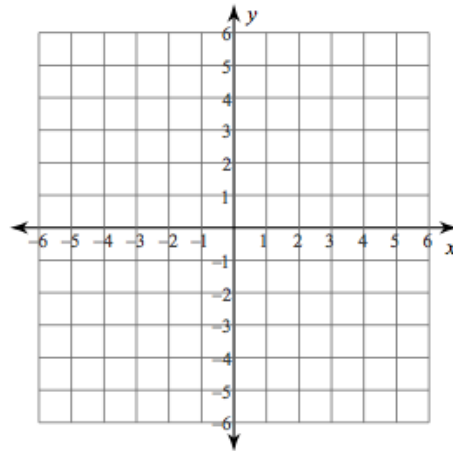
3)  $y = -5$



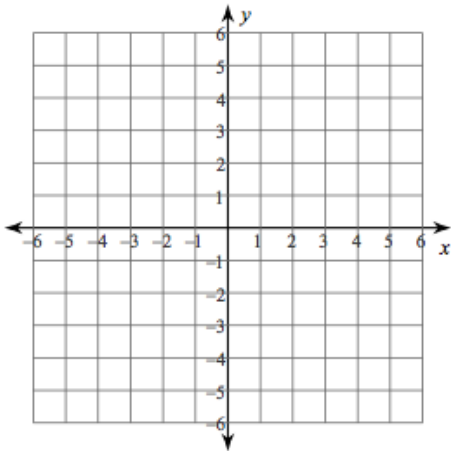
4)  $6x + 5y = 20$



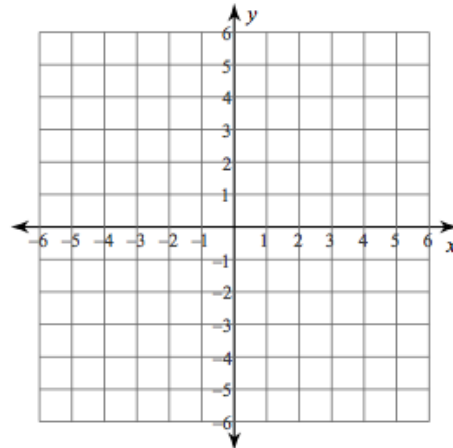
5)  $y > 2x - 5$



8)  $10x - 3y = 15$



10)  $5x - 3y \leq -15$



Write the equation of the line through the given point with the given slope.

9) through:  $(1, 2)$ , slope = 7

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

17) through:  $(4, 2)$ , parallel to  $y = -\frac{3}{4}x - 5$

22) through:  $(4, -4)$ , parallel to  $y = -x - 4$

Write the equation of the line through the given points.

1)  $(19, -16), (-7, -15)$

2)  $(1, -19), (-2, -7)$

**Find the slope of each line.**

1)  $y = -\frac{5}{2}x - 5$

8)  $4x + 5y = -10$

**Solve each system by elimination.**

9)  $5x + y = 9$   
 $10x - 7y = -18$

1)  $-4x - 2y = -12$   
 $4x + 8y = -24$

**Solve each system by substitution.**

13)  $y = 2x$   
 $3x + 3y = -18$

1)  $y = 6x - 11$   
 $-2x - 3y = -7$

## Systems of Equations Word Problems

- 1) Kristin spent \$131 on shirts. Fancy shirts cost \$28 and plain shirts cost \$15. If she bought a total of 7 then how many of each kind did she buy?
- 2) There are 13 animals in the barn. Some are chickens and some are pigs. There are 40 legs in all. How many of each animal are there?
- 4) The school that Stefan goes to is selling tickets to a choral performance. On the first day of ticket sales the school sold 3 senior citizen tickets and 1 child ticket for a total of \$38. The school took in \$52 on the second day by selling 3 senior citizen tickets and 2 child tickets. Find the price of a senior citizen ticket and the price of a child ticket.

**Function Notation**

1.  $f(x) = x^2 + 5x - 24$

- a. Find  $f(0)$
- b. Find  $f(-1)$
- c. Find  $f(3)$

2.  $f(x) = 3x^2 - 4$

- a. Find  $f(0)$
- b. Find  $f(-1)$
- c. Find  $f(1)$
- d. Find  $f(.5)$

5.  $f(x) = x - 3$  and  $g(x) = x^2 + 2$

- a. Find  $f(g(0))$
- b. Find  $g(f(0))$
- c. Find  $g(0) f(0)$
- d) Are any of the solutions to a,b or c the same?

**Find each product.**

10)  $(3m - 1)(8m + 7)$

5)  $(x - 4)^2$

22)  $(n^2 + 6n - 4)(2n - 4)$

10)  $(8a^2 + 4)(8a^2 - 4)$

7)  $(x - 5)(x + 5)$

18)  $(4a + 7)^2$

**Simplify each expression.**

1)  $(5p^2 - 3) + (2p^2 - 3p^3)$

28)  $9(7k + 8) + 3(k - 10)$

**Factor each completely.**

1)  $3p^2 - 2p - 5$

15)  $6x^2 + 37x + 6$

7)  $m^2 + 2m - 24$

26)  $6v^2 + 66v + 60$

3)  $12x^3 + 2x^2 - 30x - 5$

2)  $12p^3 - 21p^2 + 28p - 49$

1)  $16n^2 - 9$

2)  $4m^2 - 25$



**Solve each equation by factoring.**

1)  $(3n - 2)(4n + 1) = 0$

4)  $(n + 2)(2n + 5) = 0$

5)  $3k^2 + 72 = 33k$

6)  $n^2 = -18 - 9n$

8)  $k^2 = -4k - 4$

14)  $3x^2 - 8x = 16$

**Simplify. Your answer should contain only positive exponents.**

2)  $(x^4)^{-3} \cdot 2x^4$

7)  $\frac{x^3 y^3 \cdot x^3}{4x^2}$

21)  $\frac{(2pm^{-1}q^0)^{-4} \cdot 2m^{-1}p^3}{2pq^2}$

22)  $\frac{(2hj^2k^{-2} \cdot h^4j^{-1}k^4)^0}{2h^{-3}j^{-4}k^{-2}}$

15)  $(3k^4)^4$

26)  $\frac{2x^4y^{-4}z^{-3}}{3x^2y^{-3}z^4}$