

11. Solve the system:

$$\begin{array}{r} y = 5x + 13 \\ y - 5x = 12 \\ \quad +5x \quad +5x \\ \hline y = 12 + 5x \end{array}$$

No Solution

12. Solve the system:

$$\begin{array}{r} -3x + 3y = 3 \\ -3(-x + y = 3) \\ \hline 3x - 3y = -9 \end{array}$$

$$0 = -6$$

No Solution

13. Solve the system:

$$\begin{array}{r} y = 2x + 1 \\ 2y = 4x + 2 \\ \hline y = 2x + 1 \end{array}$$

SAME LINE!

Inf. many sol.

14. Alice's Athletic Arena requires members to pay \$20 to join, and members must pay \$1.50 for each time they come to work out. Roy's Romper Room requires members to pay \$5 to join and members must pay \$4 for each time they come to work out.

Set up two linear functions for the cost, C, or working out at each gym as a function of the number of times, n, that a person works out.

Equation 1 =  $y = 1.50x + 20$

Equation 2 =  $y = 4x + 5$

Solve the system of equations. For how many visits, n, will the cost at both gyms be the same?

$(6, 29)$

6 visits, they both cost \$29.

15. Telephone company A charges \$20 per month and \$0.10 per text. Telephone company B charges \$15 per month and \$0.20 per text. Let t = the number of texts and C = cost.

a. Write a system of equations to represent the cost of each plan.

$y = .10x + 20$

$y = .20x + 15$

b. After how many text messages will the cost of the bill be the same?

$(50, 25)$  after 50 texts the bill will cost

16. Games-R-Us offers a video game rental program with a monthly fee of \$10 plus \$2 per game rental. Games2Go charges a \$2 monthly fee plus \$4 per game. If you rent 8 games a month, then which plan is cheaper and by how much?



17. Two local ice cream shops are having promotions. The Tasty Cream is charging an \$8 fee for their promotional card and \$1.50 per cone. The Ice Castle is charging a \$3 fee for their promotional card and \$2.00 per cone. If you are planning on going to buy 7 ice cream cones for you and your friends, which ice cream shop would you choose and why?