

What do you know about solving Systems of Equations?

1. What is a system of equations?

A set of two or more equations

2. Three possible solutions for a system of equations:

1 → point (x, y)
 0 → no solution
 infinitely many sol'n's

3. Three ways to solve a system of equations:

graphing
 substitution
 elimination/addition

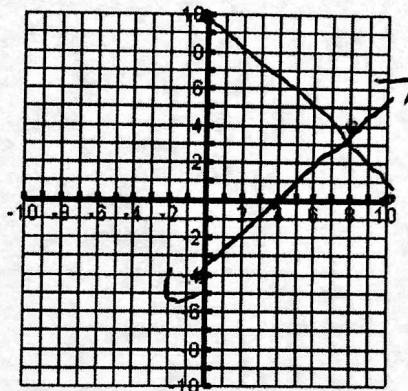
4. Solve by graphing:

$$x + y = 10$$

$$x - y = 4$$

$$y = -x + 10$$

$$y = x - 4$$



Ans: (7, 3)

5. Solve by substitution: $3x + y = -9$

$$-3x - 2y = 12$$

$$y = -3x - 9$$

$$-3x - 2(-3x - 9) = 12$$

$$-3x + 6x + 18 = 12$$

$$3x = -6$$

$$x = -2$$

$$y = -3(-2) - 9$$

$$y = -3$$

Ans: (-2, -3)

6. Solve by elimination: $\begin{cases} 2x + 4y = -4 \\ 3x + 5y = -3 \end{cases}$

$$\begin{array}{r} -6x - 12y = 12 \\ + 6x + 10y = -6 \\ \hline -2y = 6 \end{array}$$

$$-2y = 6$$

$$y = -3$$

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

$$3x = 12$$

$$x = 4$$

Ans: (4, -3)

7. Solve by graphing:

$$y > \frac{2}{3}x + 2$$

$$y < \frac{2}{3}x - 1$$

No solution

