

Review: Solving Systems

Wednesday, October 22, 2014
9:16 AM

system:
$$\begin{cases} y = -3x \\ x + y = 2 \end{cases}$$

substitution:

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

$$-2x = 2$$

$$x = -1$$

so
$$\begin{aligned} y &= -3x \\ y &= -3(-1) = 3 \end{aligned}$$

solution: $x = -1, y = 3$

$$\{(-1, 3)\}$$

example:
$$\begin{cases} y = x + 4 \\ 3y - 5x = 6 \end{cases}$$

$$3y - 5x = 6$$

$$3(x + 4) - 5x = 6$$

$$3x + 12 - 5x = 6$$

$$-2x = -6$$

$$x = 3$$

$$y = 7$$

$$\{(3, 7)\}$$

the addition method:

$$\begin{cases} 3x - 4y = 11 \\ -3x + 2y = -7 \end{cases}$$

$$-2y = 4$$

$$y = -2$$

$$3x - 4y = 11$$

$$3x - 4(-2) = 11$$

$$3x + 8 = 11$$

$$3x = 3$$

$$x = 1$$

$$\begin{aligned} a &= b \\ c &= d \\ a+c &= b+d \end{aligned}$$

$$\{(1, -2)\}$$

$$\begin{cases} 3x + 4y = -5 \\ 5x + 6y = -7 \end{cases}$$

mult by 5
mult by -3

$$15x + 20y = -25$$

$$-15x - 18y = 21$$

$$2y = -4$$

$$y = -2$$

$$3x + 4y = -5$$

$$3x + 4(-2) = -5$$

$$3x - 8 = -5$$

$$3x = 3$$

$$x = 1$$

$$\{(1, -2)\}$$