SOLVE FOR X AND Y

1.) Solve for y:

ANSWER

$2x + y = 4$

$y = -2x + 4$

ANSWER

$-2x - 3y = 4$

$y = (-2/3)x - 4/3$

ANSWER

$x + 2y = 4$

$y = (-1/2)x + 2$

2.) Solve for x:

$x + 2y = 7$

$x = -2y + 7$

ANSWER

$6y - 2x = 3$

$x = 3y - 3/2$

ANSWER

$5x - 7y = 35$

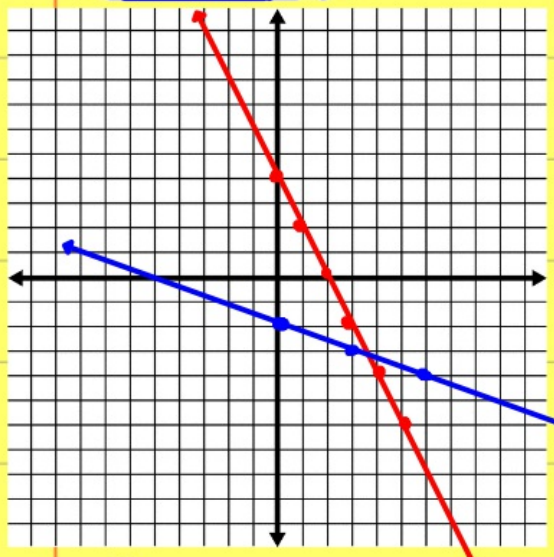
$x = (7/5)y + 7$

ANSWER

Solve the systems of equations by graphing AND substitution.

1.) $y = -2x + 4$

$3y = -x - 6$



$\frac{3y}{3} = \frac{-x}{3} - \frac{6}{3}$

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

2. $x - 2y = 1$

$3x - 6y = 3$

#1 $x - 2y = 1$

$+2y \quad +2y$

$x = 2y + 1$

#2 $3(2y+1) - 6y = 3$

#3 $6y + 3 - 6y = 3$

$3 = 3$

inf. sol.

Main Ideas/Questions	Notes
WHAT IS IT?	a method of solving systems of equations in which you add or subtract the equations to eliminate a variable.
Same Signs Subtract STEPS TO SOLVE Different Signs Add	**Step 1:** Make sure equations are lined up! **Step 2:** Add or Subtract equations to eliminate the variable with common coefficients. **Step 3:** Solve the equation for the remaining variable. **Step 4:** Plug-in your answer into either original equation and Solve for the other variable.

Solving Using Elimination

$4-(-2)$

Ex. 1) $y = 3x + 4$

$(-)\ y = x - 2$

$0 = 2x + 6$

$-6 \quad -6$

$-6 = 2x$

$\frac{-6}{2} = \frac{2x}{2}$

$-3 = x$

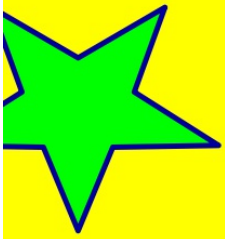
Are the equations lined up?
Do x or y have matching coefficients?
Eliminate x or y?
Are the signs the same or different?
Add or subtract?

$y = x - 2$

$y = -3 - 2$

$y = -5$

$(-3, -5)$



Solving Using Elimination

Ex. 2) $x + 4y = 13$

$(-)\ x - y = 3$

$5y = 10$

$\frac{5y}{5} = \frac{10}{5}$

$y = 2$

Are the equations lined up?
Do x or y have matching coefficients?
Eliminate x or y?
Are the signs the same or different?
Add or subtract?

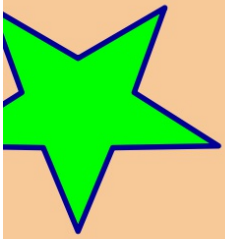
$x - y = 3$

$x - 2 = 3$

$+2 \quad +2$

$x = 5$

(5, 2)



Solving Using Elimination

Are the equations lined up?
Do x or y have matching coefficients?
Eliminate x or y?
Are the signs the same or different?
Add or subtract?

Ex. 3) $3x - 10y = 14$

$(-)\ 3x - 9y = 15$

$-y = -1$

$\frac{-y}{-1} = \frac{-1}{-1}$

$y = 1$

$3x - 9(1) = 15$

$3x - 9 = 15$

$+9 \quad +9$

$3x = 24$

$\frac{3x}{3} = \frac{24}{3}$

$x = 8$

(8,1)

Ex. 4) $4x + 2y = 6$

$(-)\ -2x + 2y = 18$

$6x = -12$

$\frac{6x}{6} = \frac{-12}{6}$

$x = -2$

$4(-2) + 2y = 6$

$-8 + 2y = 6$

$+8 \quad +8$

$2y = 14$

$\frac{2y}{2} = \frac{14}{2}$

$y = 7$

(-2,7)

Solving Using Elimination

Are the equations lined up?
Do x or y have matching coefficients?
Are the signs the same or different?
Add or subtract?

$$\begin{array}{r} 4x + 9y = 5 \\ (+)\ -4x + 7y = 11 \\ \hline 16y = 16 \end{array}$$

$$\frac{16y}{16} = \frac{16}{16}$$

$$y = 1$$

$$4x + 9(1) = 5$$

$$4x + 9 = 5$$

$$-9 \quad -9$$

$$\frac{4x}{4} = \frac{-4}{4}$$

$$x = -1$$

$(-1, 1)$

$$\begin{array}{r} 10x - 3y = 18 \\ (+)\ -2x + 3y = 6 \\ \hline 8x = 24 \end{array}$$

$$\frac{8x}{8} = \frac{24}{8}$$

$$x = 3$$

$$-2(3) + 3y = 6$$

$$-6 + 3y = 6$$

$$+6 \quad +6$$

$$\frac{3y}{3} = \frac{12}{3}$$

$$y = 4$$

$(3, 4)$