

Name: Key

Class: _____

M8-U5: HW #5 - Solving Systems by Elimination

Date: _____

Solve by elimination. Show your work.

$$1. \begin{cases} x+2y=7 \\ 3x-2y=-3 \end{cases}$$

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

$$\boxed{x=1}$$

$$\begin{array}{r} (*x)+2y=7 \\ -1 \quad \quad -1 \\ \hline \end{array}$$

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

$$\boxed{y=3}$$

$$\boxed{P(1,3)}$$

CK
 $3(1)-2(3) \stackrel{?}{=} -3$

$$3-6 \stackrel{?}{=} -3$$

$$-3 = -3 \checkmark$$

$$2. \begin{cases} 3x+y=20 \\ -(x+y=12) \end{cases} \rightarrow \begin{cases} 3x+y=20 \\ -x-y=-12 \end{cases}$$

$$\frac{2x}{2} = \frac{8}{2}$$

$$\boxed{x=4}$$

$$\begin{array}{r} (4)+y=12 \\ -4 \quad \quad -4 \\ \hline \end{array}$$

$$\boxed{y=8}$$

$$\boxed{P(4,8)}$$

CK

$$3(4)+(8) \stackrel{?}{=} 20$$

$$12+8 \stackrel{?}{=} 20$$

$$20 = 20 \checkmark$$

$$3. \begin{cases} 2x+5y=-1 \\ -2(x+2y=0) \end{cases} \rightarrow \begin{cases} 2x+5y=-1 \\ -2x-4y=0 \end{cases}$$

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

$$x+2(-1)=0$$

$$x-2=0$$

$$+2 \quad +2$$

$$\boxed{x=2}$$

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

CK

$$2(2)+5(-1) \stackrel{?}{=} -1$$

$$4-5 \stackrel{?}{=} -1$$

$$-1 = -1 \checkmark$$

$$4. \begin{cases} 3x+5y=10 \\ +x-5y=-10 \end{cases}$$

$$\frac{4x}{4} = \frac{0}{4}$$

$$\boxed{x=0}$$

$$\cancel{x-5(0)=-10}$$

$$\cancel{x=0=-10}$$

$$\cancel{x=}$$

$$\boxed{P(0,2)}$$

CK

$$(0)-5(2) \stackrel{?}{=} -10$$

$$-10 = -10 \checkmark$$

$$5. \begin{cases} -6x - 4y = 21 \\ -6x + 3y = 0 \end{cases} \rightarrow \begin{cases} -6x - 4y = 21 \\ 6x - 3y = 0 \end{cases}$$

$$\begin{aligned} -6x - 4(-3) &= 21 \\ -6x + 12 &= 21 \\ -12 & \quad -12 \end{aligned}$$

$$-6x = 9$$

$$\begin{aligned} -6 & \quad -6 \\ \hline x &= -\frac{3}{2} \end{aligned}$$

Spiral:

Solve the following system of equations graphically.

$$7. \begin{cases} y = -\frac{3}{4}x + 3 \\ y = \frac{3}{2}x - 6 \end{cases}$$

$$\begin{aligned} -7y &= 21 \\ \hline y &= -3 \end{aligned}$$

$$y = -3$$

$$\begin{aligned} \text{CK} \\ -6(-\frac{3}{2}) + 3(-3) &? 0 \\ 9 - 9 &? 0 \\ 0 &= 0 \checkmark \end{aligned}$$

$$6. \begin{cases} 3x + 6y = 6 \\ 2(2x - 3y = 4) \end{cases} \rightarrow \begin{cases} 3x + 6y = 6 \\ 4x - 6y = 8 \end{cases}$$

$$\begin{aligned} 7x &= 14 \\ \hline x &= 2 \end{aligned}$$

$$x = 2$$

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

$$6 + 6y = 6$$

$$\begin{aligned} -6 & \quad -6 \\ \hline 6y &= 0 \\ y &= 0 \end{aligned}$$

$$y = 0$$

$$\begin{aligned} \text{CK} \\ 2(2) - 3(0) &? 4 \\ 4 - 0 &? 4 \\ 4 &= 4 \checkmark \end{aligned}$$

