

Solving Systems of Equations by Elimination

Name Key Class Period _____

Solve each system of linear equations by using the elimination method.

$$\begin{array}{r} 1. \quad \begin{array}{l} -x + y = 1 \\ x + y = 3 \end{array} \\ \hline 2y = 4 \\ y = 2 \end{array} \quad \begin{array}{l} x + 2 = 3 \\ x = 1 \end{array}$$

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

$$\begin{array}{r} 2. \quad \begin{array}{l} -x + 3y = 6 \\ x + 3y = 18 \end{array} \\ \hline 6y = 24 \\ y = 4 \end{array}$$

$$\begin{array}{l} x + 12 = 18 \\ x = 6 \end{array}$$

$$\boxed{(6, 4)}$$

$$\begin{array}{r} 3. \quad \begin{array}{l} x + 4y = -8 \\ x - 4y = -8 \end{array} \\ \hline 2x = -16 \\ x = -8 \end{array} \quad \begin{array}{l} -8 + 4y = -8 \\ 4y = 0 \\ y = 0 \end{array}$$

$$\boxed{(-8, 0)}$$

$$\begin{array}{r} 4. \quad \begin{array}{l} -1(3x + 4y = 19) \\ 3x + 6y = 33 \\ + \quad -3x - 4y = -19 \end{array} \\ \hline 2y = 14 \\ y = 7 \end{array}$$

$$\begin{array}{l} 3x + 28 = 19 \\ 3x = -9 \\ x = -3 \end{array}$$

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

$$5. \quad -1(x + 4y = 11)$$

$$+ \quad \cancel{x} - 6y = 11$$

$$+ \quad -\cancel{x} - 4y = -11$$

$$\hline -10y = 0$$

$$y = 0$$

$$x + 0 = 11$$

$$x = 11$$

$$\boxed{(11, 0)}$$

$$6. \quad -1(6x - 3y = 6)$$

$$6x + 8y = -16$$

$$+ \quad -\cancel{6x} + 3y = -6$$

$$\hline \frac{11y}{11} = \frac{-22}{11}$$

$$y = -2$$

$$6x - 3(-2) = 6$$

$$6x + 6 = 6$$

$$6x = 0$$

$$x = 0$$

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

$$7. \quad + \quad -3x + y = 3$$

$$+ \quad \cancel{3x} + 2y = -12$$

$$\hline 3y = -9$$

$$y = -3$$

$$3x - 6 = -12$$

$$3x = -6$$

$$x = -2$$

$$\boxed{(-2, -3)}$$

$$8. \quad + \quad 2x - 3y = 6$$

$$+ \quad \cancel{x} + 3y = 3$$

$$\hline 3x = 9$$

$$x = 3$$

$$3 + 3y = 3$$

$$3y = 0$$

$$y = 0$$

$$\boxed{(3, 0)}$$