Systems of Equations in Two Variables Practice

Name: _____ Date: _____

Question 1

Solve

I. Equation 1 : $3x - 4y = 14$ Equation 2 : $5x + y = 8$

II. Equation 1 : $2x + 6y = 4$ Equation 2 : $3x - y = 6$

Systems of Equations in Two Variables Practice

III. Equation 1 : $x + 3y = 7$ Equation 2 : $-x + 4y = 7$

IV. Equation 1 : $5x + 3y = 19$ Equation 2 : $x - 6y = 11$

V. Equation 1 : $12x - 6y = -15$ Equation 2 : $-4x + 2y = 5$

Systems of Equations in Two Variables Practice

Name: **Key** Date: _____

Question 1

Solve

I. Equation 1 : $3x - 4y = 14$ Equation 2 : $5x + y = 8$

$5x + y = 8 \xrightarrow{\text{convert}} y = 8 - 5x$

$3x - 4y = 14 \xrightarrow{\text{substitute}} 3x - 4(8 - 5x) = 14 \xrightarrow{\text{solve}} x = 2$

$5x + y = 8 \xrightarrow{\text{substitute}} 5(2) + y = 8 \xrightarrow{\text{solve}} y = -2$

$(2, -2)$

II. Equation 1 : $2x + 6y = 4$ Equation 2 : $3x - y = 6$

$3x - y = 6 \xrightarrow{\text{convert}} y = -6 + 3x$

$2x + 6y = 4 \xrightarrow{\text{substitute}} 2x + 6(-6 + 3x) = 4 \xrightarrow{\text{solve}} x = 2$

$3x - y = 6 \xrightarrow{\text{substitute}} 3(2) - y = 6 \xrightarrow{\text{solve}} y = 0$

$(2, 0)$

Systems of Equations in Two Variables Practice

III. Equation 1 : $x + 3y = 7$ Equation 2 : $-x + 4y = 7$

$$\begin{array}{r} x + 3y = 7 \\ + \quad -x + 4y = 7 \\ \hline 7y = 14 \end{array} \xrightarrow{\text{solve}} y = 2$$

$$x + 3y = 7 \xrightarrow{\text{substitute}} x + 3(2) = 7 \xrightarrow{\text{solve}} x = 1$$

$(1, 2)$

IV. Equation 1 : $5x + 3y = 19$ Equation 2 : $x - 6y = 11$

$$5x + 3y = 19 \xrightarrow{\text{multiply}} 10x + 6y = 38$$

$$\begin{array}{r} 10x + 6y = 38 \\ + \quad x - 6y = 11 \\ \hline 11x = 49 \end{array} \xrightarrow{\text{solve}} x = \frac{49}{11}$$

$$x - 6y = 11 \xrightarrow{\text{substitute}} (49 / 11) - 6y = 11 \xrightarrow{\text{solve}} y = \frac{-12}{11}$$

$$\left(\frac{49}{11}, \frac{-12}{11} \right)$$

V. Equation 1 : $12x - 6y = -15$ Equation 2 : $-4x + 2y = 5$

$$-4x + 2y = 5 \xrightarrow{\text{multiply}} -12x + 6y = 15$$

$$\begin{array}{r} -12x + 6y = 15 \\ + \quad 12x - 6y = -15 \\ \hline 0 = 0 \end{array}$$

Infinite Solutions