

$$= 4$$

$$1) y = -2x -$$

$$2) 2x - y =$$

$$-11$$
$$= -7$$

$$3) y = -5x + 1$$

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

$$5) y = 4 - 5x$$

$$6) x = 3x + 6$$

$$7) -3x + x = y$$

Solving Systems of Equations by Substitution Worksheet

$$\begin{aligned} 8) \quad & -5x + y = -3 \\ & 3x + 8y = 24 \end{aligned}$$

$$\begin{aligned} 9) \quad & 3x + 8y = -20 \\ & -5x + y = 19 \end{aligned}$$

$$\begin{aligned} 10) \quad & -2x + 3y = 3 \\ & -5x + y = 13 \end{aligned}$$

$$\begin{aligned} 11) \quad & 6x + 6y = -6 \\ & 5x + y = -13 \end{aligned}$$

$$\begin{aligned} 12) \quad & -2x - 4y = 2 \\ & 3x + 3y = -3 \end{aligned}$$

$$\begin{aligned} 13) \quad & 5x + 8y = -17 \\ & 2x - 7y = -17 \end{aligned}$$

$$\begin{aligned} 14) \quad & 2x - 6y = -6 \\ & -7x + 8y = -5 \end{aligned}$$

Solving Systems of Equations by Elimination Worksheet

$$1) \begin{cases} -4x - 2y = -12 \\ 4x + 8y = -24 \end{cases}$$

$$2) \begin{cases} -6x - 5y = 1 \\ 6x - 4y = -10 \end{cases}$$

$$3) \begin{cases} x - y = 11 \\ 2x + y = 19 \end{cases}$$

$$4) \begin{cases} -4x - 9y = 9 \\ x + 3y = -6 \end{cases}$$

$$5) \begin{cases} 5x + y = 9 \\ 10x - y = 18 \end{cases}$$

$$6) \begin{cases} -3x + 7y = -16 \\ -9x + 5y = 16 \end{cases}$$

$$7) \begin{cases} 16x + 10y = 10 \\ -8x + 5y = 5 \end{cases}$$

Solving Systems of Equations by Elimination Worksheet

$$\begin{aligned} 8) \quad & -7x - 6y = 9 \\ & -4x + 5y = -22 \end{aligned}$$

$$\begin{aligned} 9) \quad & 5x - 4y = -30 \\ & 3x - 9y = -18 \end{aligned}$$

$$\begin{aligned} 10) \quad & -4x - 2y = 12 \\ & -10x + 7y = -25 \end{aligned}$$

$$\begin{aligned} 11) \quad & 3x - 2y = 2 \\ & 5x - 5y = 10 \end{aligned}$$

$$\begin{aligned} 12) \quad & 5x - 4y = -12 \\ & 3x - 6y = 6 \end{aligned}$$

$$\begin{aligned} 13) \quad & -12x = -20y - 7x \\ & 10y + 4x = 2x \end{aligned}$$

$$\begin{aligned} 14) \quad & 3 + 2x - y = 0 \\ & -3 - 7y = 10x \end{aligned}$$

Solving System

substitution

1) $y = 6x - 11$
 $-2x - y = -7$

(2, 1)

$-2x - (6x - 11) = -7$
 $-2x - 6x + 11 = -7$
 $-8x + 11 = -7$
 $-8x = -18$
 $x = \frac{18}{8} = \frac{9}{4}$

$y = 6(2) - 11$
 $y = 12 - 11$
 $y = 1$

2) $2x - 3y = -1$
 $y = x + 1$

(-2, -1)

$2x - 3(x + 1) = -1$
 $2x - 3x - 3 = -1$
 $-x - 3 = -1$
 $-x = 2$
 $x = -2$

$y = -2 + 1$
 $y = -1$

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

(1, 2)

$5x - 4(-3x + 5) = -3$
 $5x + 12x - 20 = -3$
 $17x - 20 = -3$
 $17x = 17$
 $x = 1$

$y = -3(1) + 5$
 $y = -3 + 5$
 $y = 2$

4) $y = 5x - 7$
 $3x - 2y = -12$

(2, 3)

$3x - 2(5x - 7) = -12$
 $3x - 10x + 14 = -12$
 $-7x + 14 = -12$
 $-7x = -26$
 $x = \frac{26}{7}$

$y = 5(2) - 7$
 $y = 10 - 7$
 $y = 3$

5) $y = 4x + 6$
 $-5x - y = 21$

(-3, -6)

$-5x - (4x + 6) = 21$
 $-5x - 4x - 6 = 21$
 $-9x - 6 = 21$
 $-9x = 27$
 $x = -3$

$y = 4(-3) + 6$
 $y = -12 + 6$
 $y = -6$

6) $x = 1 - y$
 $3x + 3y = 15$

(7, -6)

$3(1 - y) + 3y = 15$
 $3 - 3y + 3y = 15$
 $3 = 15$

$x = 1 - 3(-6)$
 $x = 1 + 18$
 $x = 19$

7) $-3x + y = 4$
 $x = y + 3$

$-3(y + 3) + y = 4$
 $-3y - 9 + y = 4$
 $-2y - 9 = 4$
 $-2y = 13$
 $y = -\frac{13}{2}$

$x = -\frac{13}{2} + 3$
 $x = -\frac{13}{2} + \frac{6}{2}$
 $x = -\frac{7}{2}$

Solving systems of equations by elimination or graphing

8) $-5x + y = -3$
 $3x - 8y = 24$

$(0, -3)$

9) $3x + 8y = -20$
 $-5x + y = 19$

$(-4, -1)$

10) $-3x + 3y = 3$
 $-5x + y = 13$

$(-3, -2)$

11) $5x + 6y = -6$
 $5x + y = -13$

$(-3, 2)$

12) $3x - 4y = 2$
 $3x + 3y = -3$

$(-2, 1)$

13) $5x + 8y = -17$
 $2x - 7y = -17$

$(-5, 1)$

14) $2x - 6y = -6$
 $-7x + 8y = -5$

$(3, 2)$

$$\begin{array}{r} 5x + y = -3 \\ 3x - 8y = 24 \\ \hline -37x = -37 \\ x = 1 \end{array}$$

$$\begin{array}{r} -10y = -3 \\ y = -3 \end{array}$$

$$\begin{array}{r} 3x + 8y = -20 \\ -5x + y = 19 \\ \hline 19x = -19 \\ x = -1 \end{array}$$

$$\begin{array}{r} 4y = -20 \\ 8y = -20 \\ \hline 8y = -8 \\ y = -1 \end{array}$$

$$\begin{array}{r} -3x + 3y = 3 \\ -5x + y = 13 \\ \hline -2x + 2y = 10 \\ -x + y = 5 \\ \hline -x = 3 \\ x = -3 \end{array}$$

$$\begin{array}{r} y = 13 \\ 1 = 13 - 15 \\ = -2 \end{array}$$

$$\begin{array}{r} 5x + 6y = -6 \\ 5x + y = -13 \\ \hline 5y = 7 \\ y = 1.4 \end{array}$$

$$\begin{array}{r} 6x + 8y = -6 \\ 6x + y = -13 \\ \hline 7y = 7 \\ y = 1 \end{array}$$

$$\begin{array}{r} -3y = -13 \\ y = 4.33 \\ 1 = 2 \end{array}$$

$$\begin{array}{r} 3x - 4y = 2 \\ 3x + 3y = -3 \\ \hline -7y = 5 \\ y = -0.71 \end{array}$$

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

$$\begin{array}{r} -4y = -4 \\ y = 1 \end{array}$$

$$\begin{array}{r} 5x + 8y = -17 \\ 2x - 7y = -17 \\ \hline 17x = -17 \\ x = -1 \end{array}$$

$$\begin{array}{r} 5x + 8y = -17 \\ 17x = -17 \\ \hline 17y = 0 \\ y = 0 \end{array}$$

$$\begin{array}{r} 2x = -10 \\ x = -5 \end{array}$$

$$\begin{array}{r} 2x - 6y = -6 \\ -7x + 8y = -5 \\ \hline -11x + 10y = 1 \\ 11x - 10y = -1 \end{array}$$

$$\begin{array}{r} -7(3y) = -21 \\ -21y = -21 \\ y = 1 \end{array}$$

$$\begin{array}{r} 2x = 6 \\ x = 3 \end{array}$$

Solving Systems of Equations by Elimination Worksheet

1) $-4x - y = -12$
 $4x + y = -24$

$(6, 6)$

-4
 4

$2 = -12$
 $4 = -24$

 $4 = -36$
 6
 $y = -6$

$1x + 8(6) = -24$
 $1x - 48 = -24$

 $+48 +48$
 $4x = 24$
 $\frac{4x}{4} = \frac{24}{4}$
 $x = 6$

2) $-6x + 5y = 1$
 $6x + 4y = -10$

$(-1, -1)$

$-6x$
 $6x$

$y = 1$
 -10

 -9
 9

 -1

$6x + 4(-1) = -10$
 $6x - 4 = -10$

 $+4 +4$
 $6x = -6$
 $\frac{6x}{6} = \frac{-6}{6}$
 $y = -1$

3) $x - y = 1$
 $2x + y = 9$

$(10, -1)$

$x - y = 1$
 $2x + y = 9$

 $3x = 3$
 $\frac{3x}{3} = \frac{3}{3}$
 $x = 1$

10
 -10

 1
 10

 1

4) $-4x + 9y = 9$
 $x - 3y = -6 \rightarrow 3(x - 3y) = -6$

$(9, 5)$

$4x + 9y = 9$
 $3x - 9y = -18$

 $-x = -9$
 $\frac{-x}{-1} = \frac{-9}{-1}$
 $x = 9$

$-4(9) + 9y = 9$
 $-36 + 9y = 9$

 $+36 +36$
 $9y = 45$
 $\frac{9y}{9} = \frac{45}{9}$
 $y = 5$

5) $5x + y = 9$
 $10x - 7y = -18$

$(1, 4)$

$35x + 7y = 3$
 $10x - 7y = -18$

 $45x = -15$
 $\frac{45x}{45} = \frac{-15}{45}$
 $x = -1$

$5(1) + y = 9$
 $5 + y = 9$

 $-5 -5$
 $y = 4$

6) $-3x + 7y = -16$
 $-9x + 5y = 16 \rightarrow -3(-3x + 7y) = -16$

$(-4, -4)$

$-16 \rightarrow 7$
 -9

 $-16 = 64$
 $\frac{-16}{-1} = \frac{64}{-1}$
 $y = -4$

$-3(-3x + 7y) = -16$
 $-3(-12 + 7(-4)) = -16$
 $-3(-12 - 28) = -16$
 $-3(-40) = -16$
 $120 = -16$

 $-3x = 12$
 $\frac{-3x}{-3} = \frac{12}{-3}$
 $x = -4$

7) $16x - 10y = 10$
 $-8x - 6y = 6 \rightarrow 2(-8x - 6y) = 6$

$(0, -1)$

$16x - 10y = 10$
 $-16x - 12y = 6$

 $-22y = 16$
 $\frac{-22y}{-22} = \frac{16}{-22}$
 $y = -1$

$16x - 10(-1) = 10$
 $16x + 10 = 10$

 $-10 -10$
 $16x = 0$
 $\frac{16x}{16} = \frac{0}{16}$
 $x = 0$

Solving Systems of Equations Worksheet

8) $-7x - 8y = 9$
 $-4x + 9y = -22$

$(1, -2)$

$-7x - 8y = 9$
 $4x + 9y = -22$

$36x - 72y = 180$
 $28x - 27y = -88$

 $8x - 45y = 268$
 $y = -2$

9) $5x + 4y = -30$
 $3x - 9y = -18$

$(-6, 0)$

$x + 4y = -30$
 $-9y = -18$

$5(-6) + 4(0) = -30$
 $-30 + 0 = -30$
 30

 $0 = 0$
 $y = 0$

10) $-4x - 2y = 14$
 $-10x + 7y = -2$

$(-1, -5)$

$5(-4x - 2y) = 5(14)$
 $-2(-10x + 7y) = -2(-2)$

$20x - 10y = 70$
 $20x - 14y = -4$

 $-4y = 74$
 $y = -18.5$
 $-2(-5) = 10$
 $+10 = 14$
 $-10 = -14$

 $-4x = 4$
 $-4 = -4$
 $x = -1$

11) $3x - 2y = 2$
 $5x - 5y = 10$

$(-2, -4)$

$-2y = 2 \rightarrow y = -1$
 $-5y = 10 \rightarrow y = -2$

$3x - 2(-1) = 2$
 $3x + 2 = 2$
 $3x = 0$
 $x = 0$
 $3x - 2(-4) = 2$
 $3x + 8 = 2$
 $3x = -6$
 $x = -2$

12) $5x + 4y = -14$
 $3x + 6y = 6$

$(-6, 4)$

$x + 4y = -14$
 $x + 6y = 6$

$5(-6) + 4(4) = -14$
 $-30 + 16 = -14$
 $-14 = -14$
 $3(-6) + 6(4) = 6$
 $-18 + 24 = 6$
 $6 = 6$
 $2y + 4 = 2(2)$
 $2y + 4 = 4$
 $2y = 0$
 $y = 0$

13) $-14 = -20y - 10x$
 $10y + 4 = 2x - 10$

$(2, 0)$

$-20y = -14$
 $-10y = 4$

$-20y = -14$
 $+20y = -8$

 $-11x = -22$
 $x = 2$
 $10y + 4 = 2(2)$
 $10y + 4 = 4$
 $10y = 0$
 $y = 0$

14) $3 + 2x - y = 0$
 $-3 - 7y = 10x + 2$

$(-1, 1)$

$-3 = -3$
 $7y = -3$

$3 + 2(-1) - 1 = 0$
 $3 - 2 - 1 = 0$
 $0 = 0$
 $1 - y = 0$
 $1 - 1 = 0$
 $0 = 0$
 $y = 1$