

Name: _____

Solving Systems of Linear Equations

Substitution Method:

- substitute known value into the other equation
- solve for x and y
- x and y values represent the solution or point of intersection for the two lines

example: $-3x - 4y = -2$

$$y = \boxed{2x - 5}$$



$$-3x - 4(2x - 5) = -2$$

$$-3x - 8x + 20 = -2$$

$$-11x + 20 = -2$$

$$-11x = -22$$

$$\boxed{x = 2}$$



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$$y = -4x$$

$$x = \underline{\hspace{2cm}}$$

$$y = \underline{\hspace{2cm}}$$

solution: $\underline{\hspace{2cm}}$

2. $-4x + 11y = 15$

$$x = 2y$$

$$x = \underline{\hspace{2cm}}$$

$$y = \underline{\hspace{2cm}}$$

solution: $\underline{\hspace{2cm}}$

Solving Systems of Linear Equations

3. $10x - 9y = 24$

$$y = x - 2$$

$$x = \underline{\hspace{2cm}}$$

$$y = \underline{\hspace{2cm}}$$

solution: $\underline{\hspace{2cm}}$

4. $3x + y = 10$

$$y = 2x + 5$$



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$$x = \underline{\hspace{2cm}}$$

$$y = \underline{\hspace{2cm}}$$

solution: $\underline{\hspace{2cm}}$

6. $x + 3y = 14$

$$x = 10 - 2y$$

$$x = \underline{\hspace{2cm}}$$

$$y = \underline{\hspace{2cm}}$$

solution: $\underline{\hspace{2cm}}$

ANSWER KEY

Solving Systems of Linear Equations

1. $8x + 5y = 24$

$y = -4x$

$x = \underline{\quad -2 \quad}$

$y = \underline{\quad 8 \quad}$

$8x + 5(-4x) = 24$

$8x - 20x = 24$

$-12x = 24$

$x = -2$

$y = -4(-2)$

$y = 8$

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6. $x + 3y = 14$

$x = 10 - 2y$

$x = \underline{\quad 2 \quad}$

$y = \underline{\quad 4 \quad}$

solution: $\underline{\quad (2, 4) \quad}$

$10 - 2y + 3y = 14$

$10 + y = 14$

$y = 4$

$x = 10 - 2(4)$

$x = 2$