Name _____ Class _____ Date _____

Reteaching 6-2

Solving Systems Using Substitution

OBJECTIVE: Solving systems of linear equations by substitution

MATERIALS: None

Example

Solve using substitution.

$$-4x + y = -13$$
$$x - 1 = y$$

$y = 4x - 13$ ← **Rewrite each equation in the form $y = mx + b$.**

$y = x - 1$

$y = 4x - 13$ ← **Circle the sides of the equations that do not contain y.**

$y = x - 1$

$4x - 13 = x - 1$ ← **Since both circled parts equal y, they are equal to each other.**

$3x = 12$ ← **Solve for x.**

$x = 4$

$y = 4x - 13$ ← **Substitute 4 for x in either equation. Solve for y.**

$y = 4(4) - 13$

$y = 3$

The solution is (4, 3).

Check to see whether (4, 3) makes both equations true. If it doesn't, then the system has no solution.

$-4(4) + 3 \stackrel{?}{=} -13$ $\qquad$ $4 - 1 \stackrel{?}{=} 3$

$-16 + 3 \stackrel{?}{=} -13$ $\qquad$ $3 = 3$ ✓

$-13 = -13$ ✓

Exercises

Solve each system using substitution. Check your solution.

1. $-3x + y = -2$
$y = x + 6$

2. $y + 4 = x$
$-2x + y = 8$

3. $y - 2 = x$
$-x = y$

4. $6y + 4x = 12$
$-6x + y = -8$

5. $3x + y = 5$
$2x - 5y = 9$

6. $x + 4y = 5$
$4x - 2y = 11$

7. $2y - 3x = 4$
$x = -2$

8. $3y + x = -1$
$x = -3y$

9. $2x + y = -1$
$6x = -3y - 3$

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