5.2

SOLVING SYSTEMS OF LINEAR EQUATIONS BY SUBSTITUTION

Do Now

Simplify.

1) $4x + 7 + 5x - 2$

2) $5 + 4z - 2z$

3) $5(c + 8) + c + 3$

Do Now

Solve.

4) $4x - 2(3x + 1) = 16$

Do Now

Solve.

5) $-3(z-8)+10=-5$

Review: Systems of equations

A system of equations is when you have two or more equations with the same variables.

$$2x - y = 8$$

$$x + y = 1$$

Solving systems of equations means: find x and y that will fit into both equations at the same time.

In this case, the solution that will fit for this is (3,-2)

Example 1

Solve for the missing variable by substituting the number for the variable:

a) $2x + 3y = 13$

$x = 2$

Example 1

Solve for the missing variable by substituting the number for the variable:

b) $y = 14$

$y = 2x - 2$

Example 2

Use substitution to solve the system. Then check your solution algebraically.

a) $y = 2x$

$4x + y = 12$

Example 2

Use substitution to solve the system. Then check your solution algebraically.

b) $x = 2y + 1$

$3x + 2y = 19$

Example 3

Solve the linear system by substitution. Check your solution.

First, you must _____in one equation.

$$-x + y = 3$$

$$x + 2y = -6$$

Now you try...

1) $y = 2x + 5$

$3x + y = 10$

Now you try...

2) $-3x + y = -7$

$2x + 4y = 0$