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

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) $2x+3y=13$, $x=2$

b) $y=14$, $y=2x-2$

Example 2

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

a) $y=2x$, $4x+y=12$

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) $y=2x+5$, $3x+y=10$

2) $-3x+y=-7$, $2x+4y=0$