

11/28 Algebra 1-Downing

5.2 Systems by Substitution

steps

1) Isolate one variable in at least one equation

Example

1) $x - 6y = -11$
 $3x + 2y = 7$

x would be easy to get by itself here.

$x - 6y = -11$
 $+6x \quad +6y$

2) Substitute the expression from step one into the other equation and solve for the other variable.

2) $x = (6y - 11)$
 $3x + 2y = 7$
 $3(6y - 11) + 2y = 7$
 $18y - 33 + 2y = 7$
 $20y - 33 = 7$
 $+33 \quad +33$
 $20y = 40$
 $20 \quad 20$
 $y = 2$

3) Take the solution from step 2 and plug it into one of your original equations. Solve for the last variable

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

4) Write solution as an ordered pair

4) $(1, 2)$ is the solution

