## Section 6.3 The Elimination Method

We have already looked at 2 methods used to solve systems of equations:

- 1. Graphing
- 2. Substitution

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We are now going to look at the third way to solve systems of equations; elimination

-This method uses <u>opposites</u> to eliminate one of the variables.

Solve by elimination: (look for opposite) 4x + 6y = 6 3x - 8y = 8 14 x = 14 x = 2 x = 3 x = 3 x = 3 x = 3 x = 3 x = 3 x = 3 x = 3 x = 3 x = 3 x = 3 x = 3 x = 3 x = 3

By adding the equations together straight down, the y-variable is eliminated.

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Sometimes it is necessary to multiply one or both of the equations by a number in order to produce opposites that will eliminate each other.

Example:

What variable can be eliminated? How?

$$3x - 2y = 4$$

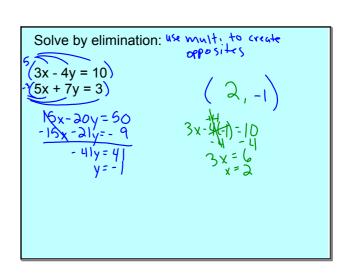
$$3(x + 5y = -6)$$

$$-0x - 15y = 18$$

$$3x - 2(-\frac{2x}{17}) = 4$$

$$3x - 2(-\frac{2x}{17}) = 4$$

$$3x - 3(-\frac{2x}{17}) = 4$$



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Example:

Remember that if you get a false statement as you solve a system, then the system has not solution. If you get an identity, then the system has infinitely many solutions.

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