

**Essential Question:** When is the Substitution Method the easiest way to solve a system of equations? Why?

<p><b>Questions:</b></p>	<p><b>Notes:</b></p>
<p>1. _____ _____</p>	<p><b>METHODS AND MEANINGS</b> The Substitution Method</p> <p><b>MATH NOTES</b></p> <p>The Substitution Method is a way to change two equations with two variables into one equation with one variable. It is convenient to use when one equation is already solved for a variable.</p> <p>For example, to solve the system: <math>x = -3y + 1</math> <math>4x - 3y = -11</math></p> <p>Use substitution to rewrite the two equations as one. In other words, replace <math>x</math> in the second equation with <math>(-3y + 1)</math> from the first equation to get <math>4(-3y + 1) - 3y = -11</math>. This equation can then be solved to find <math>y</math>. In this case, <math>y = 1</math>.</p> <p>To determine the solution to the system, substitute the value you found into either original equation to calculate the other value.</p> <p>In the example, substitute <math>y = 1</math> into <math>x = -3y + 1</math>. Then write the answer for <math>x</math> and <math>y</math> as an ordered pair.</p> <p>To check the solution, substitute <math>x = -2</math> and <math>y = 1</math> into both of the original equations.</p> <p>Check: <math>x = -3y + 1</math> If <math>x = -2</math> and <math>y = 1</math>: <math>-2 = -3(1) + 1</math> <math>-2 = -2</math> ✓</p> <p>Check: <math>4x - 3y = -11</math> If <math>x = -2</math> and <math>y = 1</math>: <math>4(-2) - 3(1) = -11</math> <math>-11 = -11</math> ✓</p>

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