

Perpendicular Lines Example

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Example 2: Find an equation for a line through $(-1, 2)$ that is perpendicular to the line given by:

$$4x - 2y = 6$$

Perpendicular Lines Example

Example 2: Find an equation for a line through $(-1, 2)$ that is parallel to the line given by:

$$4x - 2y = 6$$

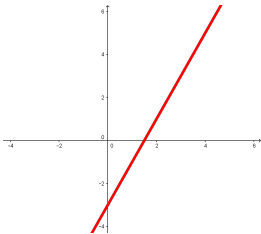
We have two lines, so we will distinguish them with colors.

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Example 2: Find an equation for a line through $(-1, 2)$ that is parallel to the line given by:

$$4x - 2y = 6$$

We have two lines, so we will distinguish them with colors.
We can roughly graph the red line to start.



Perpendicular Lines Example

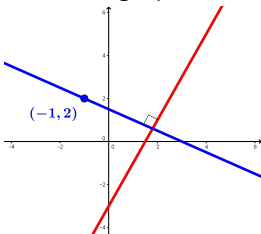
Example 2: Find an equation for a line through $(-1, 2)$ that is parallel to the line given by:

$$4x - 2y = 6$$

We have two lines, so we will distinguish them with colors.

We can roughly graph the red line to start.

Let's add our new line to the graph.



Perpendicular Lines Example

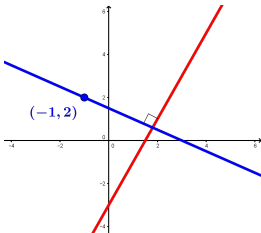
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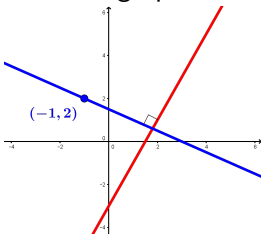
To find an equation of a line, we need:

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We have two lines, so we will distinguish them with colors. We can roughly graph the red line to start. Let's add our new line to the graph.



To find an equation of a line, we need:

A point on the line:

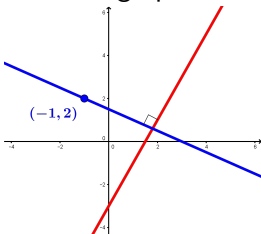
The slope of the line:

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To find an equation of a line, we need:

A point on the line: $(-1, 2)$

The slope of the line:

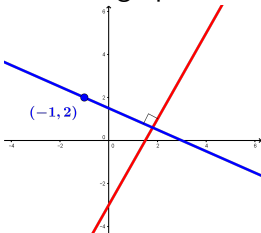
The new and original lines are **perpendicular**: $\text{slope} = -\frac{1}{\text{slope}}$

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To find an equation of a line, we need:

A point on the line: $(-1, 2)$

The slope of the line:

The new and original lines are **perpendicular**: $\text{slope} = -\frac{1}{\text{slope}}$

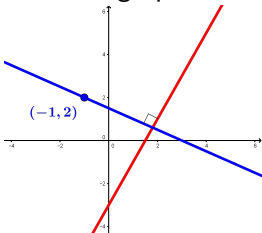
Solving for y we can find the slope of the original to be:

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To find an equation of a line, we need:

A point on the line: $(-1, 2)$

The slope of the line:

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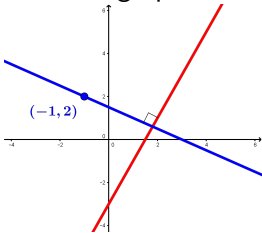
Solving for y we can find the slope of the original to be: 2

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Example 2: Find an equation for a line through $(-1, 2)$ that is parallel to the line given by:

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We have two lines, so we will distinguish them with colors. We can roughly graph the red line to start. Let's add our new line to the graph.



To find an equation of a line, we need:

A point on the line: $(-1, 2)$

The slope of the line: $slope = -\frac{1}{2}$

The new and original lines are perpendicular: $slope = -\frac{1}{slope}$

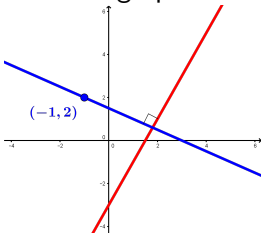
▶ Solving for y we can find the slope of the original to be: 2

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Example 2: Find an equation for a line through $(-1, 2)$ that is parallel to the line given by:

$$4x - 2y = 6$$

We have two lines, so we will distinguish them with colors. We can roughly graph the red line to start. Let's add our new line to the graph.



To find an equation of a line, we need:

A point on the blue line: $(-1, 2)$

The slope of the blue line: $slope = -\frac{1}{2}$

The new and original lines are perpendicular: $slope = -\frac{1}{slope}$

Solving for y we can find the slope of the original to be: 2

Using the Point-Slope Form an equation is: $y - 2 = -\frac{1}{2}(x + 1)$