## **Graphic Organizer**

How to guide for solving problems using critical thinking.

Organize your Information		
Identify what the question is asking you to do.		
<ul> <li>Identify the knowns and unknowns.</li> <li>Knowns - given information in the question</li> <li>Unknowns - additional information that leads to the answer</li> </ul>		
ldentify formula, process, or pattern.		
Other notes - any helpful information, prior knowledge, vocabulary to help you answer the question		
Solve the Problem		
Write each calculation or step. Explain calculation or step.		
Check your Answer		
Did you answer the question asked? Is your answer reasonable? How can you check your answer?		

## **Example**

## **Solve**

## Problem

Find the equation of the line perpendicular to the line y = -5x + 2 that passes through the point (3, -1)

Organize

KnownUnknownLine 1: y = -5x + 2 $m_1 = -5$ Slope 2:  $m_2 =$ Line 2: passes through (3, -1)Y-int, 2:  $b_2 =$ 

$$\frac{\text{Unknown}}{2: m_2 = }$$

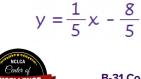
Formula

$$y = mx + b$$
;  $m_2 = -1$   
slope  $m_1$ 

Notes

⊥ lines: Slopes are negative reciprocals  $m_2 = -1/m_1$ 

Calculation	
$m_2 = -1/m_1$ $m_2 = -1/-5 = 1/5$	Find Slope of line 2 From slope of line 1
$y = \frac{1}{5}x + b$	Set up equation for line 2 with slope of line 2
(3, -1) = (x, y) $-1 = \frac{1}{5}(3) + b$	Use the point (3, -1) to find b (y-int.) of line 2
$-1 = \frac{3}{5} + b$ $-\frac{3}{5} - \frac{3}{5}$	Simplify
$-\frac{3}{5} - \frac{3}{5} - \frac{3}{5} + b$ $-\frac{8}{5} = b$	Simplify to find b of line 2
$y = \frac{1}{5} x + \left(-\frac{8}{5}\right)$	Use $m_2$ and $b_2$ to write equation!



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Calculation

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