Math Study Strategies

Guidelines for Graphing a Linear Equation

If given the **standard form** of a linear equation, $Ax + By = C$, follow the steps below:

<u>Option 1</u>
Substitute any number for x (0 is recommended) and solve for y. This will yield one ordered pair (x,y).
Substitute any number for y (0 is recommended) and solve for x. This will yield another ordered pair (x,y).
Plot the two points on the graph and connect the dots with a straight line.

<u>Option 2</u>
Rewrite the equation $Ax + By = C$ to the form $y = mx + b$ (solve the equation for y). Then follow the guidelines for graphing a line given the slope-intercept form.

If given the **slope-intercept** form of a linear equation, $y = mx + b$, follow the steps below:

Plot the y-intercept "b" on the graph. The y-intercept is the point at which the line crosses the y-axis. For example, if "b" is 2, then the y-intercept is the point (0,2).
From the point "b" plotted on the graph, use the slope "m" to find another point. For example, if the y-intercept is the point (0,2) and the slope "m" is 2/3, go **2 units up** from the point (0,2) and **3 units right**. The coordinates for this point are (3,4).
Connect this point to the y-intercept with a line.

If given the **point-slope** form of a linear equation, $y - y_1 = m(x - x_1)$, follow the steps below:

Rewrite the equation in slope-intercept form. This will involve expanding the right side of the equation, moving y_1 to the right side of the equation, and combining like terms.
Then follow the guidelines for graphing a line given the slope-intercept form.

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