MESA COMMUNITY COLLEGE
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Learning Enhancement Center
Math Center

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Graphing Using Slope-Intercept Form

Equation of a Line in Slope-Intercept Form

$$y = mx + b$$

1. Make sure your linear equation is in slope-intercept form by solving for y.
2. Identify the slope (m) and the y-intercept (b).
3. Plot the y-intercept as your first point.
4. Use the slope to plot the second point. The slope is rise/run (read "rise over run"). The rise is the change in the y-direction and the run is the change in the positive x-direction.
   - **If the slope is positive**, the **rise** will move **up**, and the **run** will always move to the **right**.
   - **If the slope is negative**, the **rise** will move **down**, and the **run** will always move to the **right**.

Graph: $-10x + 2y = -4$

1. Write equation in slope-intercept form by solving for y.

$$-10x + 2y = -4$$

Add 10x to both sides. $2y = 10x - 4$

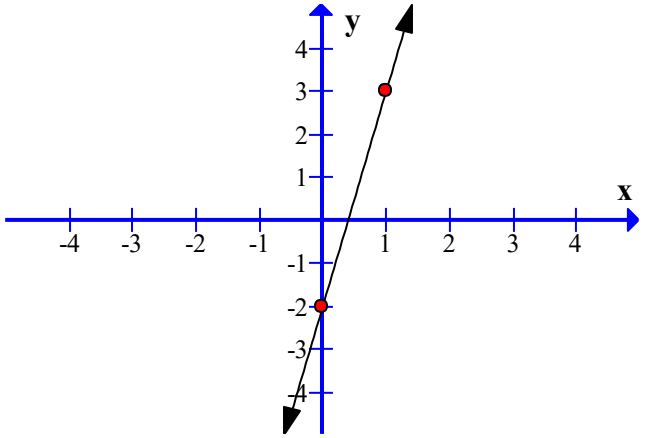
Divide both sides by 2. $y = 5x - 2$

2. The slope is 5, or 5/1. The y-intercept is -2 on the y-axis.

3.Plot the starting point, (0,-2).

4. From that point, rise 5 units up and run 1 unit to the right. Place your second point there.

5. Draw a line connecting your points that extends in both directions. (Use arrows on both ends.)



Graph: $x + 3y = 6$

1. Write equation in slope-intercept form by solving for y.

$$x + 3y = 6$$

Subtract x on both sides. $3y = -x + 6$

Divide both sides by 3. $y = -\frac{1}{3}x + 2$

2. The slope is -1/3. The y-intercept is 2 on the y-axis.

3.Plot the starting point, (0,2).

4. From that point, rise 1 unit down and run 3 units to the right. Place your second point there.

5. Draw a line connecting your points that extends in both directions. (Use arrows on both ends.)