

## 5-5 Standard Form Notes

The slope-intercept form is just one form of a linear equation.  
Another form is  $Ax + By = C$ , which uses intercepts to graph.

**$Ax + By = C$  is Standard Form for a Linear Equation**

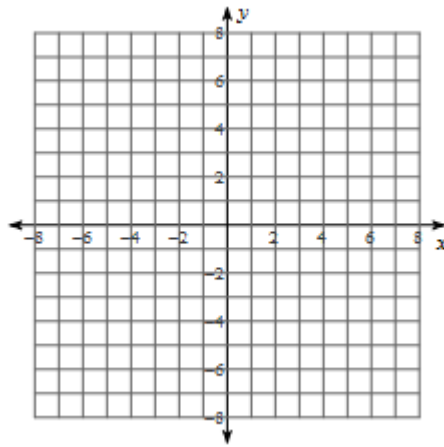
**A, B, and C must NOT be a decimal or fraction. The coefficient A, must be positive.**

### **Example 1: Graph $3x + 4y = 24$**

*Step 1: To find the x-intercept, substitute 0 for y and solve for x.*

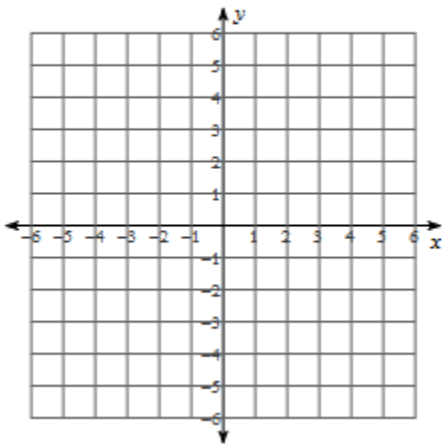
*Step 2: To find the y-intercept, substitute 0 for x and solve for y.*

*Step 3: Graph.*

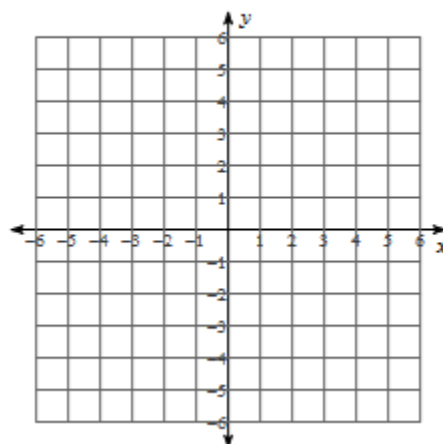


**Try on your own: Graph.**

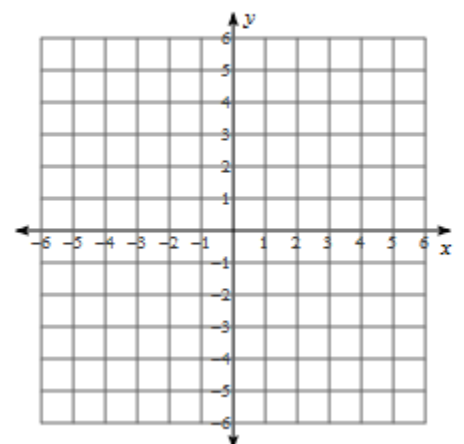
1)  $5x - 3y = 15$



2)  $8x + 3y = 12$



3)  $x - y = 3$

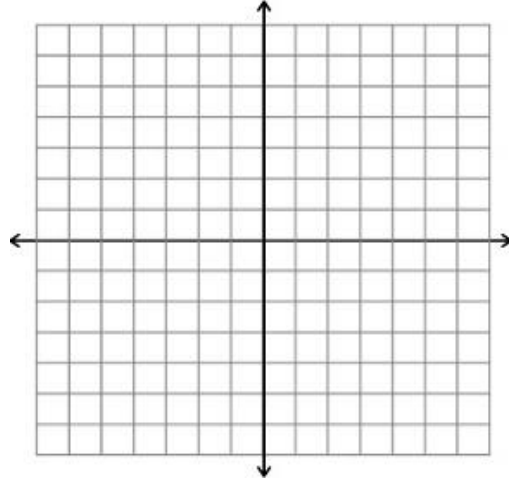


**Example 2:** When you jog, you burn 7.3 calories/min. When you run, you burn 11.3 calories/min. Write an equation to find the times you would need to run and jog in order to burn 500 calories.

Step 1: Write the equation in the form  $Ax + By = C$

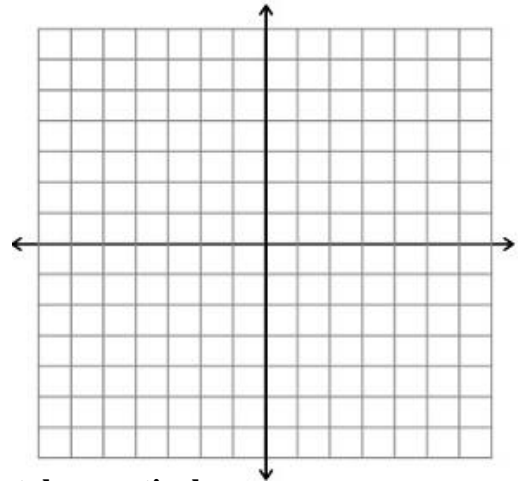
Step 2: Find the  $x$ - and  $y$ - intercepts

Step 3: Graph the equation



Step 4: Use your graph to estimate three different running and jogging times needed to burn 500 calories.

**Try on your own:** Ryan has two part time jobs. He can either make \$12/ hour mowing lawns or \$5/ hour delivering newspapers. Write and graph an equation to find the amount of time he must work at each job to make a total of \$130.



**Example 3:** Decide if the following graphs are horizontal or vertical.

1)  $y = 2$

2)  $x = -5$

3)  $x = 5$

4)  $y = 5$