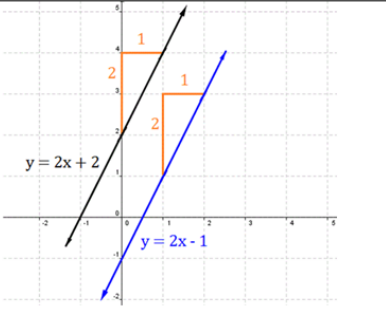
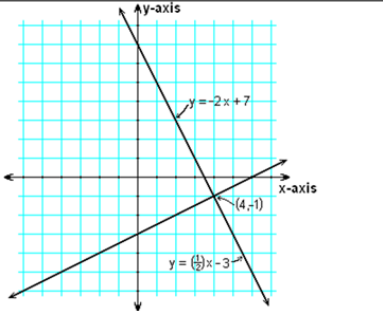
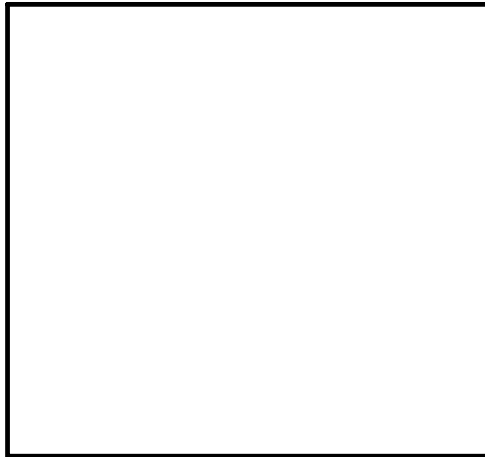


## 2-4 Extension

Parallel Lines (Never Intersect)	Perpendicular Lines (Intersect at a 90° Angle)
	
<p>Complete: The slopes of parallel lines are _____.</p>	<p>Complete: The slopes of perpendicular lines are _____.</p>

What is the equation in slope-intercept form, for the line through the point  $(-1, 2)$  and parallel to  $y = -2x + 4$ ?

What is the equation, in slope-intercept form, for the line through the point  $(3, -1)$  and perpendicular to  $y = 5x + 2$ ?

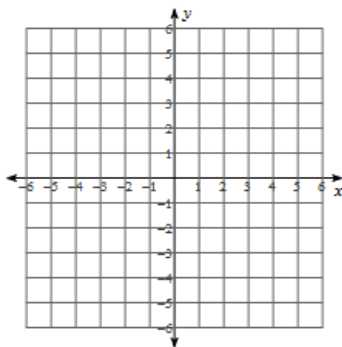


The slope-intercept form is just one form of a linear equation.  
Another form is  $Ax + By = C$ , which uses intercepts to graph.

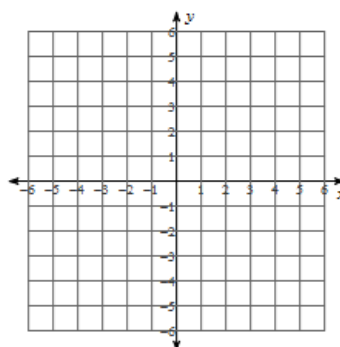
**$Ax + By = C$  is Standard Form for a Linear Equation**

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

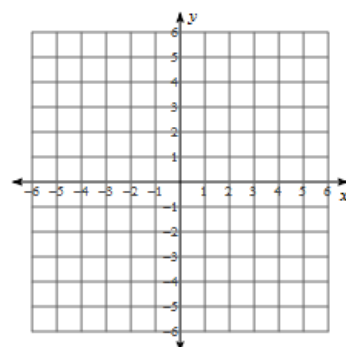
1)  $5x - 3y = 15$



2)  $8x + 3y = 12$



3)  $x - y = 3$

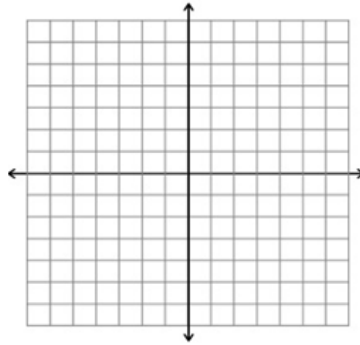


**When you jog, you burn 7.3 calories/min. When you run, you burn 11.3 calories/min. Write an equation to find the times you would need to run and jog in order to burn 500 calories.**

*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.*

## Challenge

Write the equation in slope intercept form.

$m = 0$ ; contains  $(-4, 1)$

$m = \text{undefined}$ ; contains  $(3, -2)$