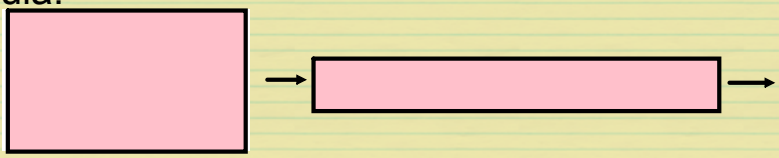
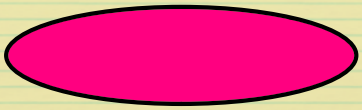
2-4 More About Linear Equations

Using the formula for slope, create the Point Slope Formula.



$$(y - y_1) = m(x - x_1) \rightarrow$$



Write the equation in slope intercept form.

m = 2; contains (-3, -9)

Write the equation in slope intercept form.

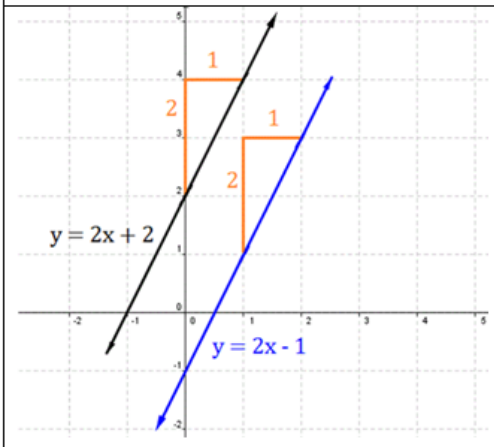
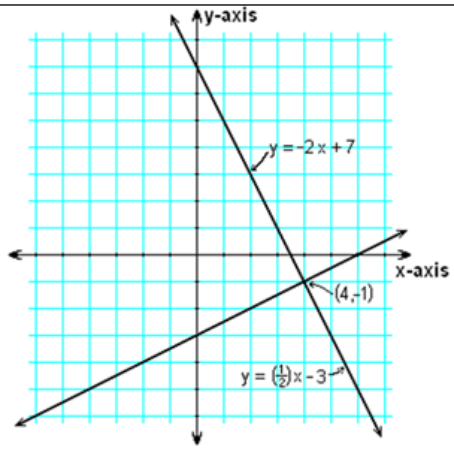
m = $-\frac{2}{3}$; contains (6, -3)

Write the equation in slope intercept form.

m = 0; contains (-4, 1)

Write the equation in slope intercept form.

m = undefined; contains (3,-2)

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

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

$$y - y_1 = m(x - x_1)$$

$$y - 2 = -2(x + 1)$$

Write the equation in slope-intercept form.

$$y - 2 = -2(x + 1)$$

$$y - 2 = -2x - 2$$

$$y = -2x$$

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

$$y - y_1 = m(x - x_1)$$

$$y + 1 = -\frac{1}{5}(x - 3)$$

Write the equation in slope-intercept form.

$$y + 1 = -\frac{1}{5}(x - 3)$$

$$y + 1 = -\frac{1}{5}x + \frac{3}{5}$$

$$\frac{-1}{} \quad \frac{-1}{}$$

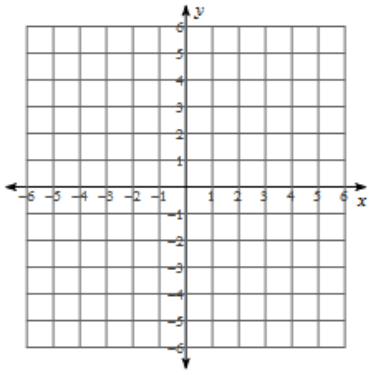
$$y = -\frac{1}{5}x - \frac{2}{5}$$

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

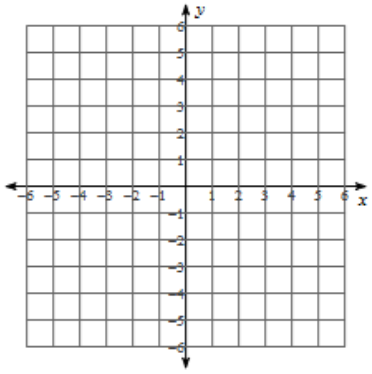
$Ax + By = C$ is Standard Form for a Linear Equation

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

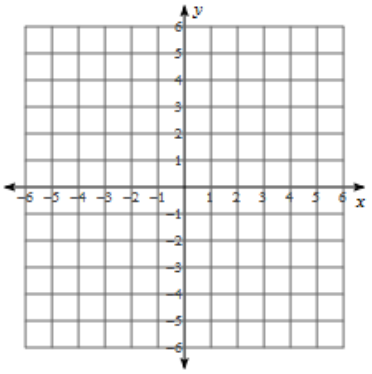
1) $5x - 3y = 15$



2) $8x + 3y = 12$



3) $x - y = 3$

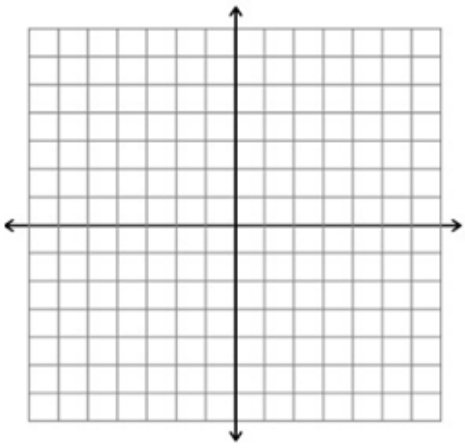


When you jog, you burn 7.3 calories/min. When you run, you burn 11.3 calories/min. Write an equation to find the times you would need to run and jog in order to burn 500 calories.

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.