

Date: _____

6.1 The Equation of a Line in Slope y-Intercept Form: $y = mx + b$

Review:

What do we already know about the equation of a line?

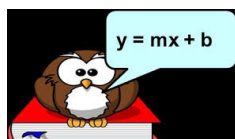
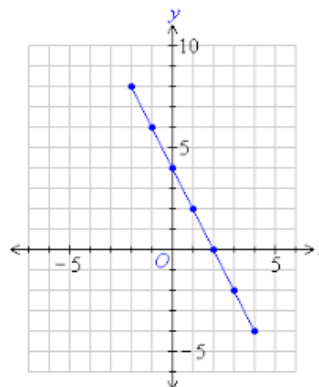
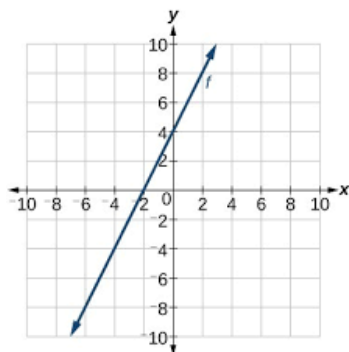
$$y = mx + b$$

Writing Equations of Lines

To write the equation of any linear relationship in $y = mx + b$ form, We need to know the slope and the y - intercept. We can do this using what we already know, no matter what representation we are given for the line.

Example 1: A line has a slope of -3 and a y -intercept of 7. Write the equation for the line.

Example 2: Write the equations of the lines shown on the graphs below.



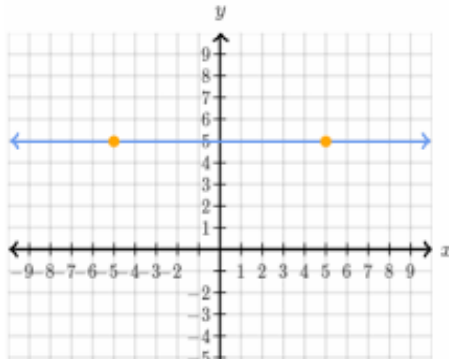
Example 3: A line passes through the points $(-3, 4)$ and $(4, -3)$. Write its equation.

Equations of Horizontal and Vertical Lines

Review:

What is the slope of a horizontal line? A vertical line?

We can use the general form $y = mx + b$ for a horizontal line. For example, what do you think the equation of the line shown below would be?



Vertical lines are a little trickier, since we can't really sub values in to $y = mx + b$. Why not?

What do you think that the equation of the line shown below would be?

