

## Warm Up

4/22/19

1. A line  $y = mx + b$  passes through the point  $(2, 9)$  and is parallel to  $y = 3x + 8$ . What is the value of  $b$ ?

$$\rightarrow m = 3 \quad (2, 9)$$

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

$$y - 9 = 3(x - 2)$$

$$y - 9 = 3x - 6$$

$$y = 3x + 3$$

$$b = 3$$

↓  
Same  
slope

2. Water is being pumped into a 10-foot-tall cylindrical tank at a constant rate. *linear*

· The depth of the water is increasing linearly

· At 1:30 p.m., the water depth was 2.4 feet.  $(0, 2.4)$

· It is now 4:00 p.m. and the depth of the water is 3.9 feet.

$$(2.5, 3.9)$$

What will the depth (in feet) of the water be at 5:00 p.m.?

$$m = \frac{3.9 - 2.4}{2.5 - 0} = \frac{1.5}{2.5} = \frac{3}{5}$$

$$x = 3.5$$

$$y = mx + b$$

$$y = \frac{3}{5}(3.5) + 2.4$$

$$y = 4.5 \text{ ft}$$

