Unit 2 Line Day 3 Note	ear Functions es Slope Intercept Form (PH 6-2)	Name: Date:	Hour:
<u>Review</u> :	Write the slope formula	m =	
Fin	d the slope of $\overrightarrow{AB}$ .	A(6, 2) and B(-4, 0)	

If you know the slope of a line and its y-intercept, you can write the equation of the line. The letter m refers to the slope and b refers to the y-intercept.

. h

Slope-Intercept Form	of a Linear Equation:	y = mx + b	
Vertical Lines:	Slope is undefined	Vertical Equation: x = a	
Horizontal Lines:	Slope is zero	Horizontal Equation: y = b	

**Example 1**: What are the slope and *y*-intercept of each equation? Sketch each graph.

**a.** y = 3x - 5 **b.**  $y = -\frac{4}{5}x$ **c.** x = 5 **d.** y = -3



**a.** Write an equation of the line with a slope of  $\frac{3}{8}$  and a *y*-intercept of 6. Example 2:

**b.** Write an equation of the line with undefined slope passing through the point (3,5)

c. Write an equation of the line with a slope of zero and a y-intercept of -4.

**Example 3:** Write the equation of the line.



You can write an equation from a graph if you know two points on the line.

Step 1: Find the slope.

- **Step 2:** Pick one of the points. Substitute for x, y and the slope into y = mx + b.
- Step 3: Solve for b.
- **Step 4:** Re-write the equation using the values for m and b.

**Example 4**: Write the equation of the line passing through the points.

**a.** A(2, -5) and B(-6, 11)

**b.** A(6, 2) and B(4, 0)

Homework: Day 3 Slope Intercept Form Worksheet