

**Warm-Up**

Evaluate each expression.

- $6a + 3$  for  $a = 2$  (15)
- $-2x - 5$  for  $x = 3$  (-11)
- $\frac{1}{4}x + 2$  for  $x = 16$  (4+2)
- $0.2x + 2$  for  $x = 15$  (0.2(15)+2)

5) Find Slope:  $(-2, 3)$   $(-6, 5)$

$\frac{5-3}{-6+2} = \frac{2}{-4} = -\frac{1}{2}$  up, 2 left

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**Vertical AND Horizontal LINES**

$\frac{5}{0} = \text{ERROR}$   
**SLOPE = UNDEFINED**  
 $X = \#$   
 $X = 2$

**SLOPE = 0**  
 $y = \#$   
 $y = 3$

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**6.2 Slope Intercept Form**

**Definition** Slope-Intercept Form of a Linear Equation

The **slope-intercept form** of a linear equation is  $y = mx + b$

$\begin{matrix} \uparrow & \uparrow \\ \text{slope} & \text{y-intercept} \end{matrix}$

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**Ex 1: Identify the Slope and Y-Intercept**

$y = mx + b$

$y = 3x - 5$        $y = -\frac{3}{4} + \frac{7}{6}x$

slope: 3      slope:  $\frac{7}{6}$   
 y-int: -5      y-int:  $-\frac{3}{4}$

\* Slope is the # w/ the x  
 \* y-int is the other # (not w/ the x)

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**Ex 2: Writing an Equation**

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

slope:  $\frac{3}{8}$        $y = mx + b$   
 y-int: 6       $y = \frac{3}{8}x + 6$

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**Ex 3: Graphing an Equation**

a)  $y = 3x - 1$

Slope:  $\frac{3 \text{ rise}}{1 \text{ run}}$   
 y-int: -1  
 Start here

b)  $y = \frac{3}{2}x - 2$

slope:  $\frac{3}{2}$   
 y-int: -2

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