# $_{f k}$ Lesson 1.6.3: Finding the Equation of a Line Given the Slope and the Intercepts

The equation of a line can be determined using the following formulae:

1. Slope-Intercept Form: y = mx + b

2. Intercept Form:  $\frac{x}{a} + \frac{y}{b} = 1$ Practice Exercises 1.6.3

A. Write the equation of the line in standard form given the slope and the y-intercept.

1. 
$$m = 3, b = 2$$

4. 
$$m=-1, b=\frac{1}{2}$$

2. 
$$m = \frac{3}{2}, b = -$$

1. 
$$m = 3, b = 2$$
  
2.  $m = \frac{3}{2}, b = -5$   
3.  $m = -6, b = -3$   
4.  $m = -1, b = \frac{1}{2}$   
5.  $m = \frac{7}{2}, b = \frac{3}{2}$ 

B. Write the equation of the line with the given x-intercept and y-intercept.

1. 
$$a = 2; b = -3$$

4. 
$$(0,-2);(1,0)$$

2. 
$$a = -5; b = 8$$

3. 
$$a = -2$$
;  $b = 6$ 

### Activity 1.6.3

A. Write the equation of the line in standard form given the slope and the y-intercept.

 $_{8}$  Lesson 1.6.3: Finding the Equation of a Line Given the

Slope and the Intercepts

A. Write the equation of the line in standard form given the

B. Write the equation of the line with the given x-intercept

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$$m = -2, b = 3$$

4. 
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2. 
$$m = \frac{2}{3}, b$$

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2.  $m = \frac{2}{3}, b = -3$   
3.  $m = -5, b = -1$   
4.  $m = -3, b = \frac{3}{2}$   
5.  $m = \frac{6}{5}, b = \frac{4}{3}$ 

3. 
$$m = -5, b = -1$$

3. 
$$m = -5, b = -1$$
 5 3  
B. Write the equation of the line with the given x-intercept

and y-intercept.  
1. 
$$a = 1; b = 5$$

lowing formulae:

1. Slope-Intercept Form: y = mx + b

slope and the y-intercept.

slope and the y-intercept.

 $\sum_{b=1}^{6} 2. \text{ Intercept Form: } \frac{x}{a} + \frac{y}{b} = 1$ Practice Exercises 1.6.3

and y-intercept.

1. a=2; b=-3

3. a = -2; b = 6

Activity 1.6.3

4. 
$$(-5,0)$$
;  $(0,-4)$ 

2. 
$$a = 3; b = -4$$

**4.** 
$$(-5,0)$$
;  $(0,-4)$   
**5.**  $(-6,0)$ ;  $(0,2)$ 

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4. (0,-2); (1,0)

4. (-5,0); (0,-4)

5. (-6,0); (0,2)

**5.** (0,1); (3,0)

1. m = 3, b = 22.  $m = \frac{3}{2}, b = -5$ 3. m = -6, b = -34.  $m = -1, b = \frac{1}{2}$ 5.  $m = \frac{7}{2}, b = \frac{3}{2}$ 

1. m = -2, b = 32.  $m = \frac{2}{3}, b = -3$ 3. m = -5, b = -14.  $m = -3, b = \frac{3}{2}$ 5.  $m = \frac{6}{5}, b = \frac{4}{3}$ 

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lowing formulae:

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and y-intercept.

1. a = 2; b = -3

2. a = -5; b = 8

3. a = -2; b = 6

and y-intercept.

2. a = 3; b = -4

1. a = 1; b = 5

**3.** (3,0); (0,3)

Activity 1.6.3

slope and the y-intercept.

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5. 
$$m=\frac{7}{2}, b=\frac{3}{2}$$

slope and the y-intercept.  
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B. Write the equation of the line with the given x-intercept and y-intercept.

1. 
$$a=2; b=-3$$

4. 
$$(0,-2)$$
;  $(1,0)$ 

2. 
$$a = -5; b =$$

3. 
$$a = -2; b = 6$$

1. 
$$a = 2; b = -3$$
  
2.  $a = -5; b = 8$   
3.  $a = -2; b = 6$   
4.  $(0, -2); (1, 0)$   
5.  $(0, 1); (3, 0)$   
1.  $a = 2; b = -3$   
2.  $a = -5; b = 8$   
3.  $a = -2; b = 6$ 

## Activity 1.6.3

A. Write the equation of the line in standard form given the slope and the y-intercept.

B. Write the equation of the line with the given x-intercept

1. 
$$m = -2, b = 3$$
  
2.  $m = \frac{2}{3}, b = -3$   
3.  $m = -5, b = -1$ 

4. 
$$m = -3, b = \frac{3}{2}$$

1. 
$$m = -2, b = 3$$
  
2.  $m = \frac{2}{3}, b = -3$   
3.  $m = -5, b = -1$   
4.  $m = -3, b = \frac{3}{2}$   
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4. (0,-2); (1,0)

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B. Write the equation of the line with the given x-intercept and y-intercept.

1. 
$$a = 1; b = 5$$

4. 
$$(-5,0);(0,-4)$$

2. 
$$a = 3$$
:  $b = -4$ 

5. 
$$(-6,0)$$
;  $(0,2)$ 

**2.** 
$$a = 3; b = -4$$
 **5.**  $(-6, 0); (0, 3)$ 

4. 
$$(-5,0);(0,-4)$$

2. 
$$a = 3; b = -4$$
  
3.  $(3,0); (0,3)$ 

and y-intercept.

1. a = 1; b = 5

5. 
$$(-6,0);(0,2)$$