

Key

# Linear Equations

Slope-Intercept Form:

$$y = mx + b$$

$m =$  slope

$b =$  y-intercept

Given the following information, write the linear equation in slope-intercept form:

1. slope = 2; y-intercept = -1  $y = 2x - 1$

2. slope =  $-\frac{3}{5}$ ; y-intercept = 4  $y = -\frac{3}{5}x + 4$

3. slope = -3; y-intercept = 2  $y = -3x + 2$

4. slope = -1; y-intercept = 7  $y = -x + 7$

5. slope =  $\frac{1}{4}$ ; y-intercept = 0  $y = \frac{1}{4}x$

6. slope =  $-\frac{5}{2}$ ; y-intercept = -3  $y = -\frac{5}{2}x - 3$

Standard Form:

$$Ax + By = C$$

Given equations in standard form, you must convert them to slope-intercept form.

Examples:

1.  $2x + y = 3$   
 $-2x$   $-2x$

$y = -2x + 3$

2.  $4x + 5y = -30$   
 $-4x$   $-4x$

$\frac{5y}{5} = \frac{-4x - 30}{5}$

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

3.  $x - 3y = 12$   
 $-x$   $-x$

$-\frac{3y}{-3} = \frac{-x + 12}{-3}$

$y = \frac{1}{3}x - 4$

4.  $x - y = -8$   
 $-x$   $-x$

$-\frac{y}{-1} = \frac{-x - 8}{-1}$

$y = x + 8$

5.  $4x - y = -2x$   
 $-4x$   $-4x$

$-\frac{y}{-1} = \frac{-4x}{-1}$

$y = 4x$

6.  $3x - 2y = 14$   
 $-3x$   $-3x$

$-\frac{2y}{-2} = \frac{3x + 14}{-2}$

$y = \frac{3}{2}x - 7$