

### Rearranging into Slope Intercept Form

**Aim:** How can we rearrange a linear equation in order to find the slope and y-intercept?

**Recall:** The slope-intercept form of a linear equation is:

$$y = m x + b$$

slope
y-intercept

❖ Not every linear equation will first appear in slope-intercept form. You must use your algebra skills to get the equation into that form before you can find the slope and y-intercept.

For the following examples, write the equation in slope-intercept form and identify the slope and the y-intercept. *\* get y alone! → solve for y*

1)  $y = 14 - 3x$   
*Keep the sign with the number*  
 $y = -3x + 14$

$m = -3$   
 $b = (0, 14)$

2)  $2y = 6x + 8$   
*undo mult. with div.*  
 $y = 3x + 4$   
*divide everything by 2*

$m = 3$   
 $b = (0, 4)$

3)  $\frac{3y}{3} = \frac{5x+9}{3}$   
*leaves as a fraction*  
 $y = \frac{5}{3}x + 3$   
 $m = \frac{5}{3}$     $b = (0, 3)$

4)  $3x + 7y = 14$   
 $-3x$   
 $7y = -3x + 14$   
 $y = -\frac{3}{7}x + 2$   
*put x term first*  
 ① sub. 3x  
 ② divide by 7

$m = -\frac{3}{7}$   
 $b = (0, 2)$

**Try It:** Write the following equations in standard form and then find the slope and y-intercept.

1.  $2x + y = 6$   
 $-2x$   
 $y = -2x + 6$   
 $y = 6 - 2x$   
 NOT IN  $y = mx + b$  form

$m = -2$     $b = (0, 6)$

2.  $2y = -4 + 5x$   
 $y = -2 + \frac{5}{2}x$   
 $y = \frac{5}{2}x - 2$

$m = \frac{5}{2}$     $b = (0, -2)$