Remediation Name _____

Unit 2 Objective 3 Section _____

Identify the x-intercept and y-intercept given an equation.

There are two different types of equations that can be given, either Standard Form or Slope-Intercept Form. The x-intercept and the y-intercept are found differently based on what form is given.

Type 1: Standard Form. $2x - y = 6$

To find the x-intercept from Standard Form, a zero will be used in place of the y value, since the x-intercept is always (a, 0). The y-value is always 0 for the x-intercept. For the example above, $2x - y = 6$ would become $2x - 0 = 6$. Solving this equation would give x=3, so the x-intercept is (3, 0).

To find the y-intercept from Standard Form, a zero will be used in place of the x value, since the y-intercept is always (0, b). The x-value is always 0 for the y-intercept. For the example above, $2x - y = 6$ would become $2(0) - y = 6$. Solving this equation would give y=-6, so the y-intercept is (0,-6).

Type 2: Slope-Intercept Form. $y = 2x - 5$

To find the x-intercept from Slope-Intercept Form, a zero will be used in place of the y value, since the x-intercept is always (a, 0). The y-value is always 0 for the x-intercept. For the example above, $y = 2x - 5$ would become $0 = 2x - 5$. Solving this equation would give $x = \frac{5}{2}$, so the x-intercept is $\left(\frac{5}{2}, 0\right)$.

To find the y-intercept from Slope-Intercept Form, a zero will be used in place of the x-value, since the y-intercept is always (0, b). The x-value is always 0 for the y-intercept. For the example above, $y = 2x - 5$ would become $y - 2(0) - 5$. Solving this equation would give y=-5, so the y-intercept is (0, -5). Since this form is Slope-Intercept Form, a short cut may be taken. The first number in the problem is always the slope and the second number is always the y-intercept. That means that the -5 is automatically the y-intercept and is in the point (0, -5).

Find the x-intercept and the y-intercept for each equation.

1. $4x - 3y = 12$
   x-intercept (,)
   y-intercept (,)

2. $y = 3x + 6$
   x-intercept _____
   y-intercept _____

3. $x - 3y = -3$
   x-intercept _____
   y-intercept _____

4. $y = \frac{2}{3}x - 6$
   x-intercept _____
   y-intercept _____

5. $2x + 5y = 10$
   x-intercept _____
   y-intercept _____

6. $y = -5x - 2$
   x-intercept _____
   y-intercept _____

7. $2x - y = -6$
   x-intercept _____
   y-intercept _____

8. $y = -\frac{7}{2}x + 3$
   x-intercept _____
   y-intercept _____

9. $4x + 3y = 4$
   x-intercept _____
   y-intercept _____

10. $y = 2x - 7$
    x-intercept _____
    y-intercept _____