Review Exercise Set 7

Exercise 1: Solve for the unknown coordinate in the given ordered pair that makes it a solution to the equation $3x - 2y = 8$.

$(6, y)$

Exercise 2: Find the x- and y-intercepts for the given equation.

$$\frac{2}{3}x - \frac{1}{4}y = 20$$
Exercise 3:  Graph the given linear equation.

$$-2x + 3y = 6$$

Exercise 4:  Graph the given linear equation.

$$y - 4 = 0$$
Exercise 5: Determine the coefficients to be placed in the shaded squares so that the graph of the equation will be a line with the given intercepts.

\[ \phantom{0} x + \phantom{0} y = -20; \ (0, 5) \text{ and } (-4, 0) \]
**Review Exercise Set 7 Answer Key**

**Exercise 1:** Solve for the unknown coordinate in the given ordered pair that makes it a solution to the equation $3x - 2y = 8$.

$(6, y)$

\[
3x - 2y = 8 \\
3(6) - 2y = 8 \\
18 - 2y = 8 \\
18 - 8 = 2y \\
10 = 2y \\
5 = y
\]

The ordered pair is $(6, 5)$.

**Exercise 2:** Find the x- and y-intercepts for the given equation.

\[
\frac{2}{3}x - \frac{1}{4}y = 20
\]

For the x-intercept let $y = 0$ and solve for $x$

\[
\frac{2}{3}x - \frac{1}{4}(0) = 20 \\
\frac{2}{3}x = 20 \\
2x = 60 \\
x = 30
\]

x-intercept is at $(30, 0)$

For the y-intercept let $x = 0$ and solve for $y$

\[
\frac{2}{3}(0) - \frac{1}{4}y = 20 \\
-\frac{1}{4}y = 20 \\
y = -80
\]

y-intercept is at $(0, -80)$
Exercise 3: Graph the given linear equation.

\[-2x + 3y = 6\]

Find the intercepts

Let \( y = 0 \)

\[-2x + 3(0) = 6\]
\[-2x + 0 = 6\]
\[-2x = 6\]
\[x = -3\]

\((-3, 0)\)

Let \( x = 0 \)

\[-2(0) + 3y = 6\]
\[0 + 3y = 6\]
\[3y = 6\]
\[y = 2\]

\((0, 2)\)

Plot the intercepts and draw the line passing through them.
Exercise 4: Graph the given linear equation.

\[ y - 4 = 0 \]

Solve the equation for \( y \)

\[ y = 4 \]

The equation \( y = 4 \) is a horizontal line so we would simply draw a line passing through the \( y \)-intercept of \((0, 4)\).

Exercise 5: Determine the coefficients to be placed in the shaded squares so that the graph of the equation will be a line with the given intercepts.

\[ x + \Box y = -20; \ (0, \ 5) \ \text{and} \ (-4, \ 0) \]

Use the coordinates of the \( y \)-intercept \((0, 5)\) to find the coefficient of \( y \)

\[ x + \Box y = -20 \]
\[ a(0) + b(5) = -20 \]
\[ 0 + b(5) = -20 \]
\[ 5b = -20 \]
\[ b = -4 \]

The coefficient for \( y \) is -4
Exercise 5 (Continued):

Use the coordinates of the x-intercept (-4, 0) to find the coefficient of x

\[
\begin{align*}
x - 4y & = -20 \\
-4a - 0 & = -20 \\
-4a & = -20 \\
a & = 5
\end{align*}
\]

The coefficient for x is 5

The equation would be $5x - 4y = -20$. 