System of Equations (Graphical Method)

a) Sketch the graphs of the linear system on a coordinate plane: $\begin{cases} x + 2y = 2 \\ y = \frac{2}{3}x - 6 \end{cases}$.

b) Name the ordered pair where the graphs of the two linear equations intersect.

c) Verify that the ordered pair named in part (a) is a solution to $x + 2y = 2$.

d) Verify that the ordered pair named in part (a) is a solution to $y = \frac{2}{3}x - 6$

System of Equations (Graphical Method)

a) Sketch the graphs of the linear system on a coordinate plane: $\begin{cases} x + 2y = 2 \\ y = \frac{2}{3}x - 6 \end{cases}$.

For the equation $x + 2y = 2$:

$$0 + 2y = 2$$
$$2y = 2$$
$$y = 1$$

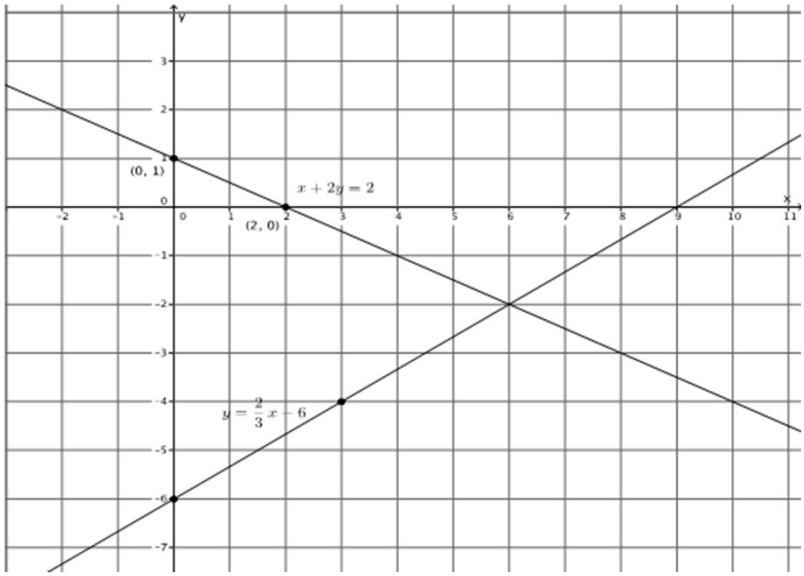
The y-intercept point is $(0, 1)$.

$$x + 2(0) = 2$$
$$x = 2$$

The x-intercept point is $(2, 0)$.

For the equation $y = \frac{2}{3}x - 6$:

The slope is $\frac{2}{3}$, and the y-intercept point is $(0, -6)$.



b) Name the ordered pair where the graphs of the two linear equations intersect.

$(6, -2)$

c) Verify that the ordered pair named in part (a) is a solution to $x + 2y = 2$.

$$6 + 2(-2) = 2$$
$$6 - 4 = 2$$
$$2 = 2$$

The left and right sides of the equation are equal.

d) Verify that the ordered pair named in part (a) is a solution to $y = \frac{2}{3}x - 6$

$$-2 = \frac{2}{3}(6) - 6$$
$$-2 = 4 - 6$$
$$-2 = -2$$

The left and right sides of the equation are equal.