System of Equations (Graphical Method)

a) Sketch the graphs of the linear system on a coordinate plane: $\begin{cases} y = \frac{1}{2}x + 4 \\ x + 4y = 4 \end{cases}$.

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 $y = \frac{1}{2}x + 4$.

d) Verify that the ordered pair named in part (a) is a solution to $x + 4y = 4$.

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a) Sketch the graphs of the linear system on a coordinate plane: $\begin{cases} y = \frac{1}{2}x + 4 \\ x + 4y = 4 \end{cases}$.

For the equation $y = \frac{1}{2}x + 4$

The slope is $\frac{1}{2}$, and the y-intercept point is $(0, 4)$.

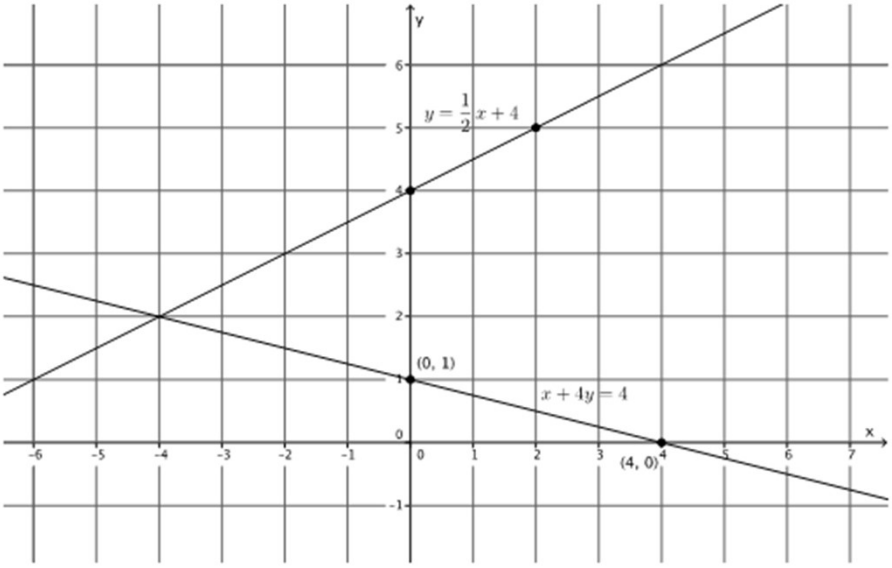
For the equation $x + 4y = 4$:

$$0 + 4y = 4$$
$$4y = 4$$
$$y = 1$$

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

$$x + 4(0) = 4$$
$$x = 4$$

The x-intercept point is $(4, 0)$.



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

$(-4, 2)$

c) Verify that the ordered pair named in part (a) is a solution to $y = \frac{1}{2}x + 4$.

$$2 = \frac{1}{2}(-4) + 4$$
$$2 = -2 + 4$$
$$2 = 2$$

The left and right sides of the equation are equal.

d) Verify that the ordered pair named in part (a) is a solution to $x + 4y = 4$.

$$\mathbf{-4 + 4(2) = 4}$$
$$\mathbf{-4 + 8 = 4}$$
$$\mathbf{4 = 4}$$

The left and right sides of the equation are equal.