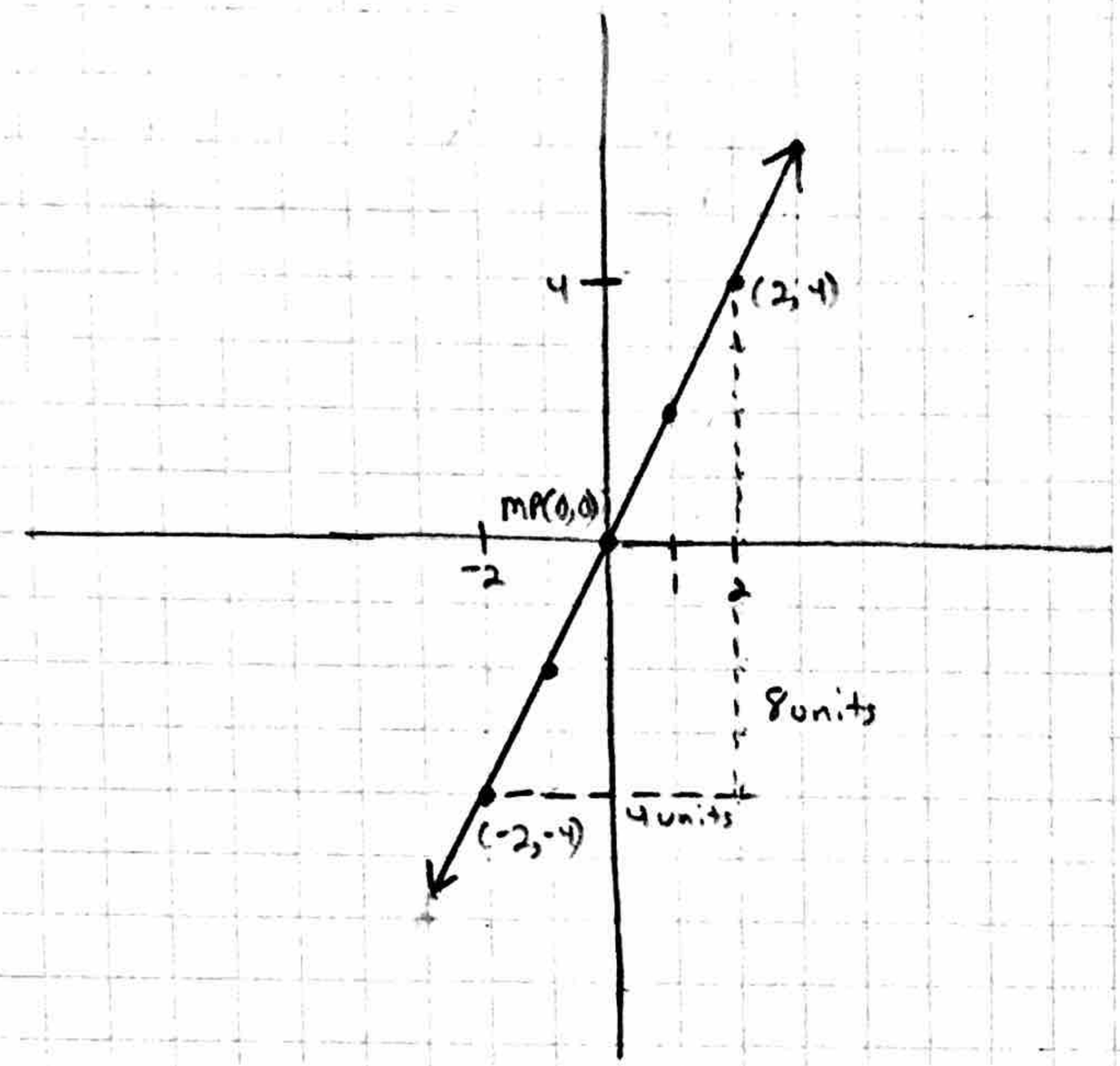
Find the midpoint of the line $y = 2x$ on the interval $-2 \leq x \leq 2$

$y = mx + b \rightarrow y = \frac{2}{1}x + 0$ $\quad m = 2$, $y\text{-int} = 0$



① Solve Inequality Cases to Get Points

$-2 \leq x \leq 2$ $\quad$ $-2 \leq x \leq 2$

$\downarrow$ $\quad$ $\downarrow$

$\boxed{x = -2}$ $\quad$ $\boxed{x = 2}$

$\downarrow$ $\quad$ $\downarrow$

$y = 2(-2) = -4$ $\quad$ $y = 2(2) = 4$

$\downarrow$ $\quad$ $\downarrow$

$\boxed{y = -4}$ $\quad$ $\boxed{y = 4}$

$\downarrow$ $\quad$ $\downarrow$

$(-2, -4)$ $\quad$ $(2, 4)$

② Find Midpoint Between $(\overset{x_1}{-2}, \overset{y_1}{-4})$ and $(\overset{x_2}{2}, \overset{y_2}{4})$

$MP\left(\frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2}\right) \rightarrow \left(\frac{-2 + 2}{2}, \frac{-4 + 4}{2}\right) \rightarrow \left(\frac{0}{2}, \frac{0}{2}\right) = (0, 0)$ $\boxed{MP \text{ is } (0, 0)}$