

3.3.35

Find and interpret the slope of the line containing the given points.

$$\left(\frac{1}{4}, \frac{1}{2}\right) \text{ and } \left(\frac{3}{8}, \frac{3}{4}\right)$$

Select the correct choice below and fill in any answer boxes within your choice.

☐ A. $m = \blacksquare$ (Type an integer or a simplified fraction.)

☐ B. The slope is undefined.

Interpret the slope.

☐ A. The slope is undefined. $\leftarrow$ if vertical line

☐ B. As x increases, y increases. $\leftarrow$ slope is positive

☐ C. There is no change in y as x increases. $\leftarrow$ if horizontal line

☐ D. As x increases, y decreases. $\leftarrow$ slope is negative

Label the points (x_1, y_1) and (x_2, y_2)
 $\left(\frac{1}{4}, \frac{1}{2}\right)$ and $\left(\frac{3}{8}, \frac{3}{4}\right)$

Plug into slope formula:

$$m = \frac{y_2 - y_1}{x_2 - x_1}$$

$$= \frac{\left(\frac{3}{4} - \frac{1}{2}\right)}{\left(\frac{3}{8} - \frac{1}{4}\right)}$$

Take a deep breath and subtract fractions.

$$= \frac{\left(\frac{3}{4} - \frac{2}{4}\right)}{\left(\frac{3}{8} - \frac{2}{8}\right)} \quad \text{CD} = 4 \quad \frac{1}{2} \cdot \frac{2}{2} = \frac{2}{4}$$

$$= \frac{\left(\frac{1}{4}\right)}{\left(\frac{1}{8}\right)} \quad \text{CD} = 8 \quad \frac{1}{4} \cdot \frac{2}{2} = \frac{2}{8}$$

Divide fractions

$$= \frac{1}{4} \div \frac{1}{8}$$

$$= \frac{1}{4} \cdot \frac{8}{1} = \frac{8}{4} = \boxed{2}$$

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(Positive $\Rightarrow$ choose option B)