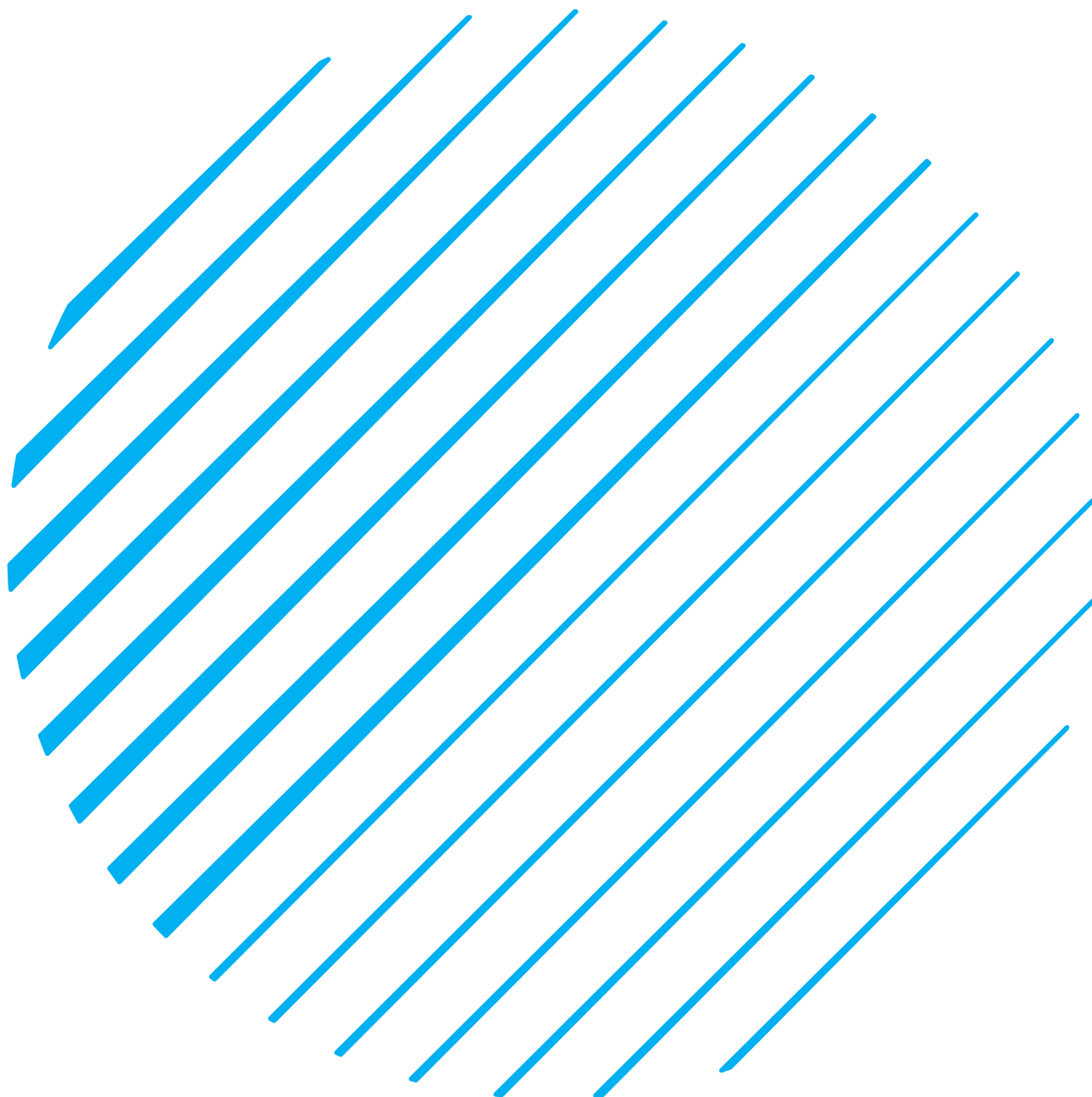


VITAL MATHEMATICS



ALGEBRA

SLOPE

STEVIE CARPENTER

INTRODUCTION

The slope in this section is in relation to the rate of change for a linear equation in two variables. The slope is calculated by using two points that are associated with the linear equation. When $x_1 = x_2$, the slope will be undefined

SLOPE EQUATION

$$m = \frac{y_2 - y_1}{x_2 - x_1} \text{ or } m = \frac{\Delta y}{\Delta x}, \quad x_1 \neq x_2$$

y_1 – y coordinate of P_1

y_2 – y coordinate of P_2

x_1 – x coordinate of P_1

x_2 – x coordinate of P_2

m – Slope

Δ (Delta) – Change of

SLOPE

$$m = \frac{y_2 - y_1}{x_2 - x_1} \text{ or } m = \frac{\Delta y}{\Delta x}, \quad x_1 \neq x_2$$

STEP 1) Identify the two points being used to calculate the slope.

Example: $(x_1, y_1): (2, 3); (x_2, y_2): (3, 2)$

STEP 2) Subtract y_1 from y_2

$$y_2 - y_1 \Rightarrow 2 - 3 = -1$$

STEP 3) Subtract x_1 from x_2

$$x_2 - x_1 \Rightarrow 3 - 2 = 1$$

STEP 4) Divide STEP 2 by STEP 3.

$$\frac{y_2 - y_1}{x_2 - x_1} = \frac{2 - 3}{3 - 2} = \frac{-1}{1} = -1$$

STEP 5) Provide Conclusion

SLOPE EXAMPLE

Example 1: Find the slope of $(4,9)$ and $(7,14)$

Example 2) Find the slope of $(-6,9)$ and $(9,6)$



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