

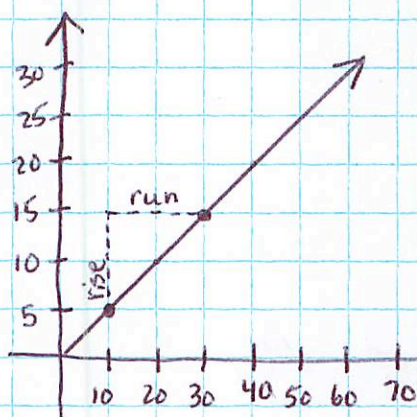
5.2 Defining Slope

Slope = steepness. Ratio of vertical rise to horizontal run.

$$\text{Slope} = \frac{\text{rise}}{\text{run}}$$

In Algebra we show slope as it would be on a Coordinate plane.

How do we find slope from a graph?



We find the rise and run between any two points on the line.

★ Always start at the left-most point!

$$m = \frac{\text{rise}}{\text{run}} = \frac{10}{20} = \frac{1}{2}$$

- Notice that if the line rises from left to right, the slope is positive.
- Negative Slopes go down from left to right.

We use the lower case letter m to represent slope. Why?

No one knows for sure

Theories:

1. French "monter" - to climb
2. m in middle of alphabet used as parameters
3. Random letter.

If we are given two coordinates of points on the line then we can use the formula: $(x_1, y_1), (x_2, y_2)$

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

Ex: Find slope between the points $P(2, -3)$ $Q(-2, 15)$

$$m = \frac{15 - (-3)}{-2 - 2} = \frac{18}{-4} \text{ or } -\frac{9}{2}$$

★ Horizontal lines have a slope of 0.

★ Vertical lines have an undefined slope.