Slope

The ***slope*** of a line measures the steepness or tilt of a line.

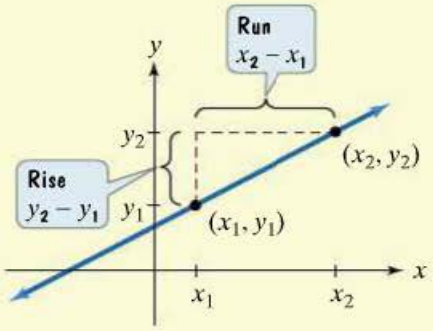
Definition of Slope

The **slope** of the line through the distinct points (x_1, y_1) and (x_2, y_2) is

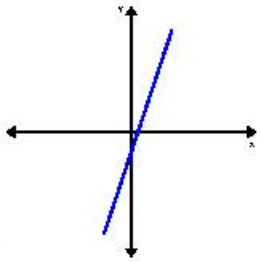
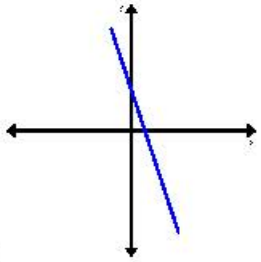
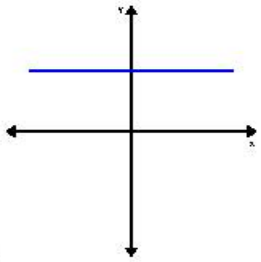
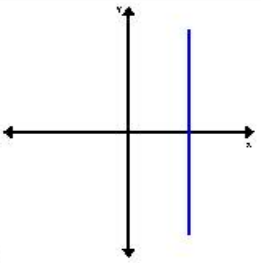
$$\frac{\text{Change in } y}{\text{Change in } x} = \frac{\text{Rise}}{\text{Run}} = \frac{y_2 - y_1}{x_2 - x_1},$$

(Rise: Vertical change; Run: Horizontal change)

where $x_2 - x_1 \neq 0$.



4 Types of Slopes

Positive Slope Lines with **positive slope** go up as we move along the line from left to right.	 $m > 0$
Negative Slope Lines with **negative slope** go down as we move along the line from left to right.	 $m < 0$
Zero Slope Any equation of the form y = b represents a horizontal line with slope 0.	 m = 0
Undefined Slope Any equation of the form x = a represents a vertical line with undefined slope.	 no m