

Slope

8th Grade

Rise over run, and the four kinds of slope a line can have.

Slope measures steepness: the change in y divided by the change in x between any two points on the line.

$$m = (y_2 - y_1) / (x_2 - x_1)$$

(1,2) and (4,8)

$$(8-2)/(4-1) = 6/3.$$

$m = 2$

Positive slope

y increases as x increases.

uphill left to right

Zero slope

y never changes: $y = 3$.

horizontal line

Undefined slope

x never changes; dividing by zero.

vertical line

THE COMMON MISTAKE

✗ $m = (x_2 - x_1) / (y_2 - y_1)$

✓ $m = (y_2 - y_1) / (x_2 - x_1)$

Rise over run. y is the rise, and it goes on top.

Slope is a rate of change. In a real context it always has units: miles per hour, pounds per kilo.