









Building stairs
should
not exceed
a slope of
0.83

Types of Slope



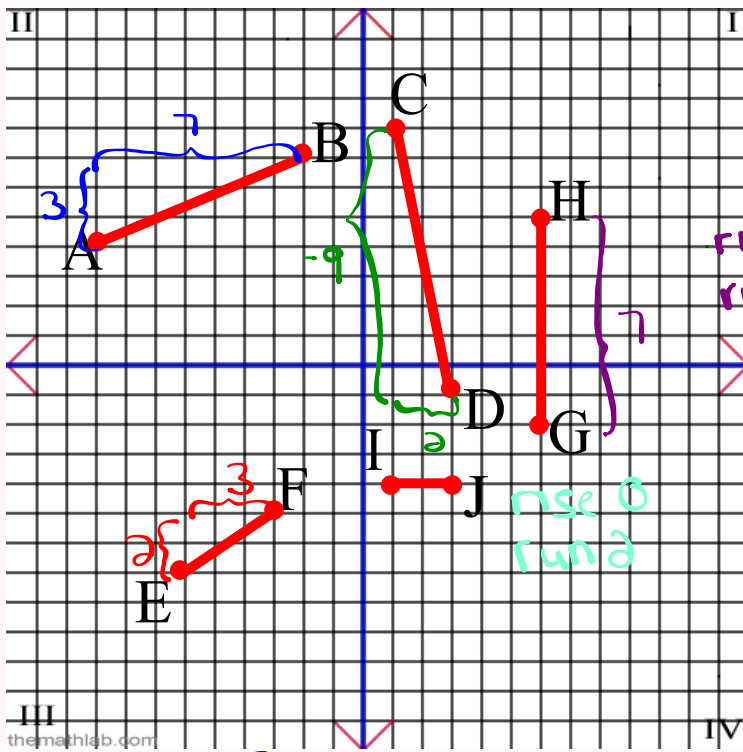
Calculating slope!

(when looking at a graph)

$$m = \text{slope} = \frac{\text{rise}}{\text{run}} = \frac{\updownarrow}{\leftrightarrow}$$



11



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

This is used when you can see the graph!



rise 7
run 0

rise 0
run 2

$$AB = \frac{3}{7}$$

$$GH = \frac{7}{0} = \text{undefined (vertical)}$$

$$CD = \frac{-9}{2}$$

$$IJ = \frac{0}{2} = 0 \text{ (Horizontal)}$$

$$EF = \frac{2}{3}$$

Slope of a Horizontal Line = 0

← = 0 →

Slope of a Vertical Line = Undefined or 1/0

↑ = 1/0 or Undefined ↓

Calculating slope!

(when given two points)

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

Calculating slope!

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

Find the slope of a line passing through the points (2,-3) and (-5,8).

$$x_2 = -5$$

$$y_2 = 8$$

$$x_1 = 2$$

$$y_1 = -3$$

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

$$m = \frac{8 - (-3)}{-5 - 2}$$

$$m = \frac{8 + 3}{-5 + -2}$$

$$m = \frac{11}{-7}$$

$$m = -\frac{11}{7}$$

This is used when you are given co-ordinates.

point \rightarrow (x,y)

Find the slope of a line passing through the points $(-5, -7)$ and $(-3, 9)$.

$$\begin{array}{ll} x_1 = -5 & x_2 = -3 \\ y_1 = -7 & y_2 = 9 \end{array}$$

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

$$m = \frac{9 - (-7)}{-3 - (-5)}$$

$$m = \frac{9 + 7}{-3 + 5}$$

$$m = \frac{16}{2} = \frac{8}{1} = 8$$

Find the slope of a line passing through the points (6, -4) and (-2, 10).

$$x_1 = 6$$

$$y_1 = -4$$

$$x_2 = -2$$

$$y_2 = 10$$

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

$$m = \frac{10 - (-4)}{-2 - 6}$$

$$m = \frac{10 + 4}{-2 + (-6)}$$

$$m = \frac{14}{-8} = -\frac{7}{4} = -\frac{7}{4}$$

Calculate the slope.

1. (3,5) (2,8)

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

$$m = \frac{8 - 5}{2 - 3}$$

$$m = \frac{3}{-1}$$

$$m = \frac{-3}{1}$$

2. (-9,-2) (7,3)

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

$$m = \frac{3 - (-2)}{7 - (-9)}$$

$$m = \frac{3 + 2}{7 + 9}$$

$$m = \frac{5}{16}$$

3. (-1,2) (0,-4)

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

$$m = \frac{-4 - 2}{0 - (-1)}$$

$$m = \frac{-4 - 2}{0 + 1}$$

$$m = \frac{-6}{1}$$