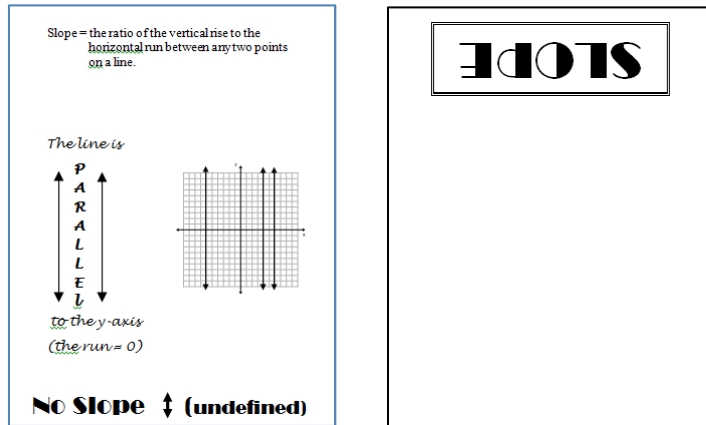


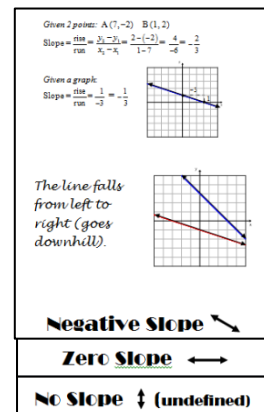
Slope Foldable—Assembly Instructions

1. This is designed as a teacher’s resource—student would create the foldable with blank paper and then enter the information themselves!
2. Run (or paste) the first two sheets back-to-back...one side reversed. For instance,



Likewise, “Definition” pastes back-to-back with “Zero Slope” and “Positive Slope” pastes to “Negative Slope”.

3. Stack the 3 sheets so that the bold titles of “Negative Slope”, “Zero Slope” and “No Slope” are equally spaced:



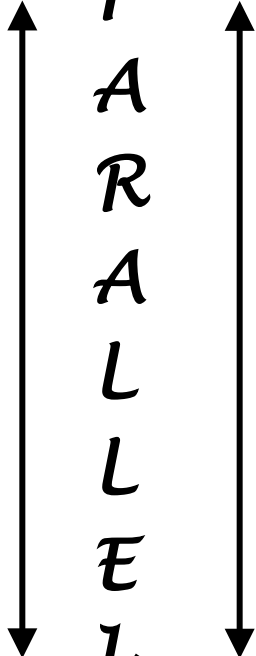
4. Fold down 3 sheets to create 6 tabs as shown. Glue or staple at fold.



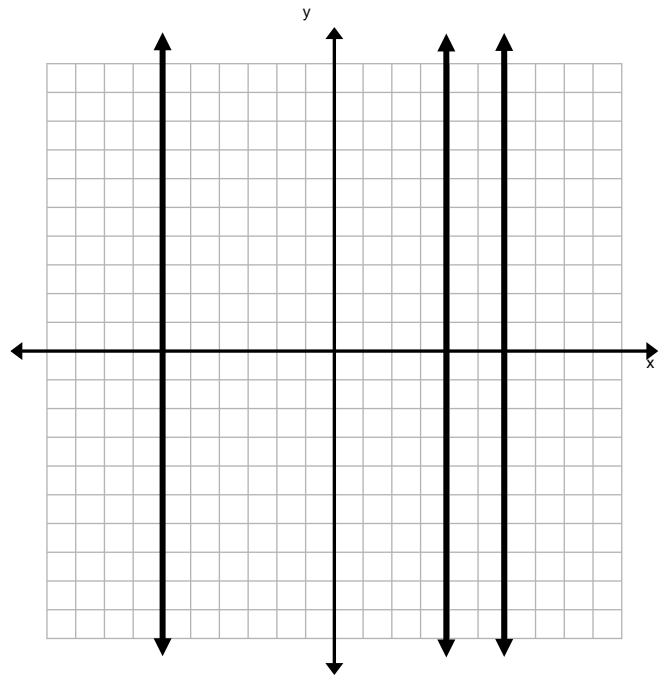
Slope = the ratio of the vertical rise to the horizontal run between any two points on a line.

The line is

*P
A
R
A
L
L
E
L*



*to the y-axis
(the run = 0)*



No Slope \updownarrow **(undefined)**

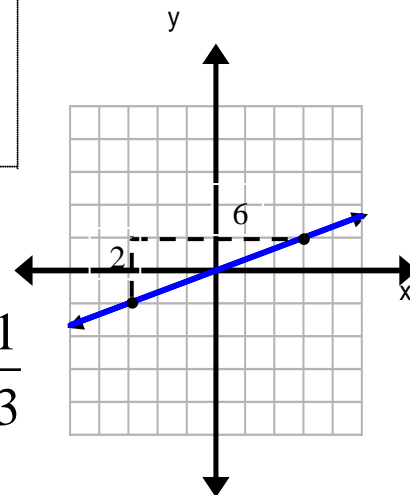
SLOPE

Given 2 points: A (7, 5) B (1, 1)

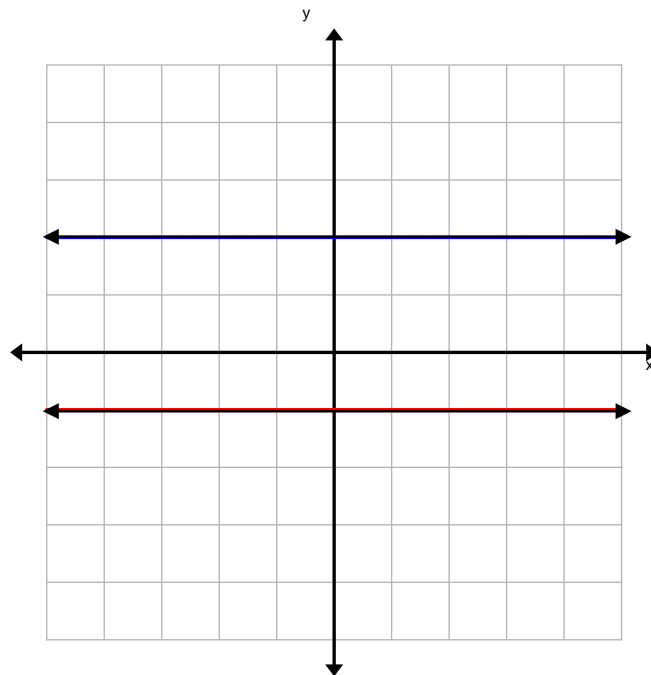
$$\text{Slope} = \frac{\text{rise}}{\text{run}} = \frac{y_2 - y_1}{x_2 - x_1} = \frac{1 - 5}{1 - 7} = \frac{-4}{-6} = \frac{2}{3}$$

Given a graph:

$$\text{Slope} = \frac{\text{rise}}{\text{run}} = \frac{2}{6} = \frac{1}{3}$$



The line is
↔
parallel
↔
to the x-axis
(the rise = 0)



Zero Slope



Given 2 points, X (6, 5) and Y (6,-3), find the slope.

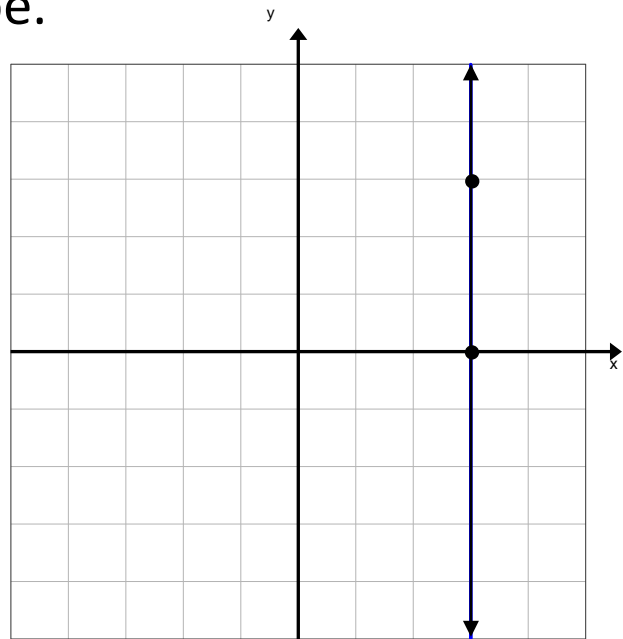
$$\text{Slope} = \frac{\text{rise}}{\text{run}} = \frac{y_2 - y_1}{x_2 - x_1} = \frac{-3 - 5}{6 - 6} = \frac{-8}{0}, \text{ which is undefined,}$$

so NO SLOPE!

Given a graph, find the slope.

$$\frac{\text{rise}}{\text{run}} = \frac{3}{0} = \text{undefined,}$$

so no slope



Slope - the steepness of a line

$$\text{Slope} = \frac{\text{rise } \updownarrow}{\text{run } \leftrightarrow} = \frac{\text{the change in } y}{\text{the change in } x} = \frac{y_2 - y_1}{x_2 - x_1}$$

$$\text{Slope} = \frac{\Delta y}{\Delta x} = \frac{\text{vertical change}}{\text{horizontal change}}$$

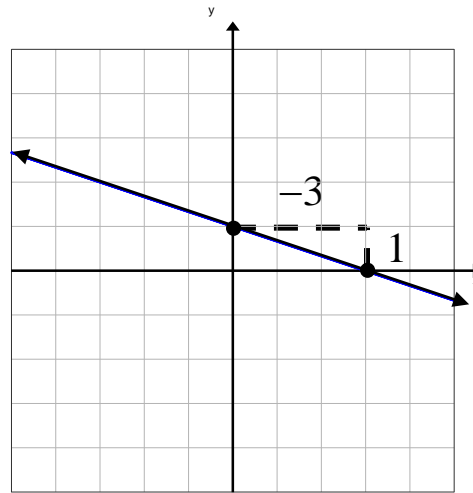
Definition

Given 2 points: A (7, -2) B (1, 2)

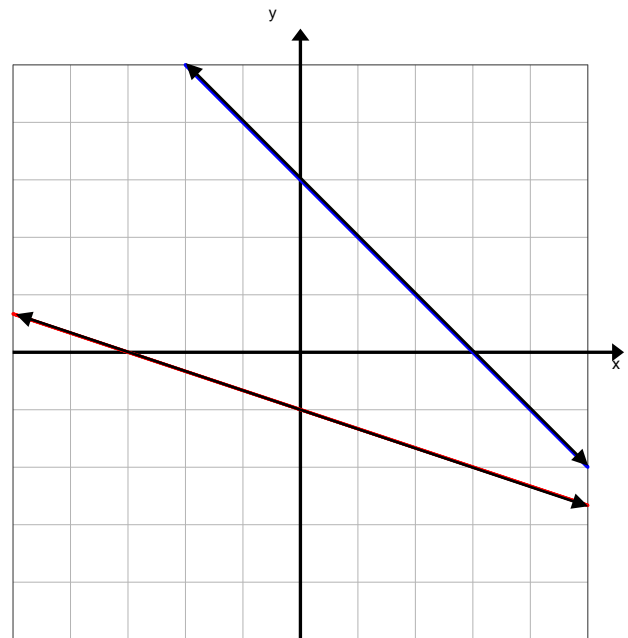
$$\text{Slope} = \frac{\text{rise}}{\text{run}} = \frac{y_2 - y_1}{x_2 - x_1} = \frac{2 - (-2)}{1 - 7} = \frac{4}{-6} = -\frac{2}{3}$$

Given a graph:

$$\text{Slope} = \frac{\text{rise}}{\text{run}} = \frac{1}{-3} = -\frac{1}{3}$$



The line falls from left to right (goes downhill).



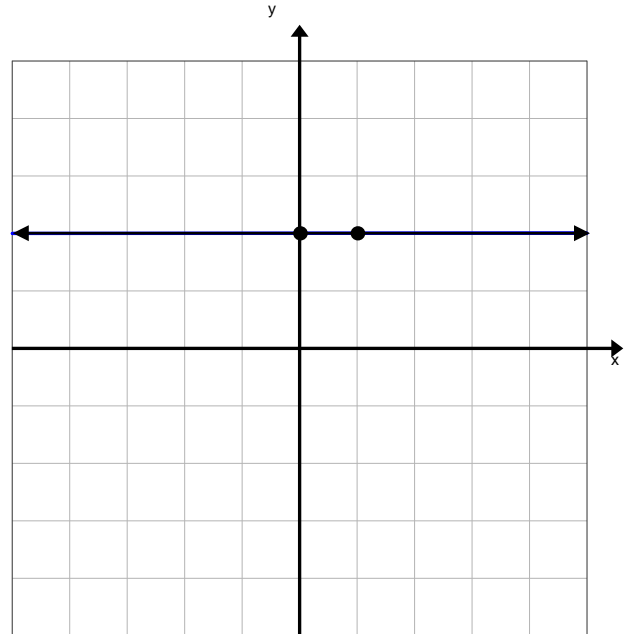
Negative Slope ↘

Given 2 points: A (-2, 5) B (1, 5)

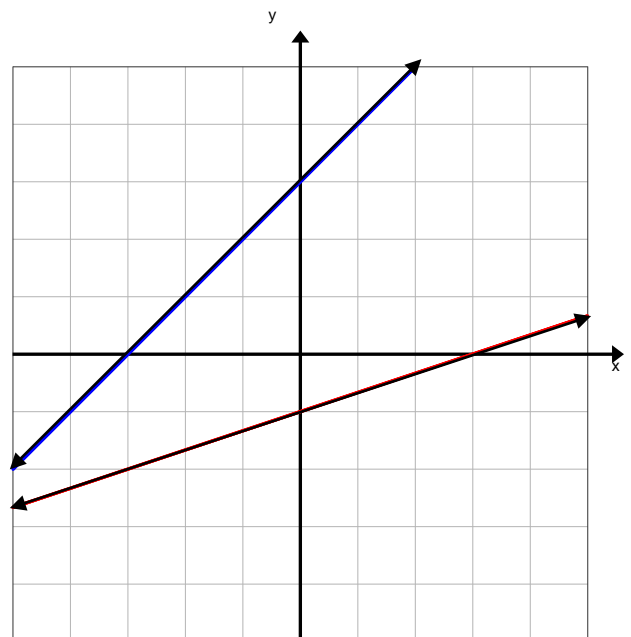
$$\text{Slope} = \frac{\text{rise}}{\text{run}} = \frac{y_2 - y_1}{x_2 - x_1} = \frac{5 - 5}{1 - (-2)} = \frac{0}{3} = 0$$

Given a graph:

$$\text{Slope} = \frac{\text{rise}}{\text{run}} = \frac{0}{1} = 0$$



The line rises from left to right (goes uphill).



Positive Slope ↗↘