Rise Over Run

GL05-V1 · storyboard · GL05 Slope. Read each picture with its sentences.

Picture 1

The slope of the line through $(-3, 5)$ and $(2, -5)$.

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

$$m = \frac{-5 - 5}{2 - (-3)} = \frac{-10}{5}$$ second minus first, both times

$$\boxed{m = -2}$$ down 2 for every 1 across

1. Find the slope of the line through negative 3, 5 and 2, negative 5.
2. The change in y goes on top, the change in x underneath.
3. Take the second point minus the first, on top and underneath: negative 5 minus 5, over 2 minus negative 3.
4. That is negative 10 over 5: the slope is negative 2.
5. The line goes down 2 for every 1 to the right.

Picture 2

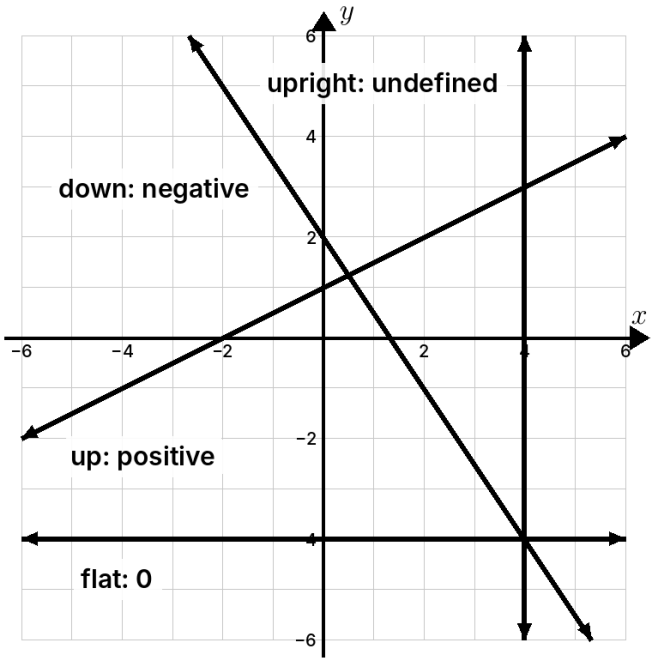
Trap $(-3, 5) \to (2, -5)$

$$\times \ \frac{2-(-3)}{-5-5} = -\frac{1}{2}$$

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

6. Watch for the trap: a slope upside down.
7. Change in y on top.

Picture 3



Up from left to right: positive.

Down: negative.

Horizontal: 0.

Vertical: undefined.

8. A line that goes up from left to right has a positive slope.
9. One that goes down has a negative slope.
10. A horizontal line has slope 0, and a vertical line has no slope at all: it is undefined, because you can't divide by 0.