

Lesson 6.3.1: Interpreting Slope and y -intercept

Georgia Standard of Excellence

MGSE9–12.S.ID.7★

Warm-Up 6.3.1 Debrief

- Find the slope and y -intercept of the function shown in the graph.

The slope is $m = \frac{\Delta y}{\Delta x}$ or $m = \frac{\text{change in } y}{\text{change in } x}$. To calculate the slope, find any two points on the line.

The graph shows that $(0, 0)$ and $(16, 1)$ are both points on the line. The formula to find the slope between two points (x_1, y_1) and (x_2, y_2) is $m = \frac{y_2 - y_1}{x_2 - x_1}$. Substitute $(0, 0)$ and $(16, 1)$ into the formula to find the slope.

$$m = \frac{y_2 - y_1}{x_2 - x_1} = \frac{1 - 0}{16 - 0} = \frac{1}{16}$$

The slope between the two points $(0, 0)$ and $(16, 1)$ is $\frac{1}{16}$.

The y -intercept is the point at which the graph crosses the y -axis. The graph shows that the y -intercept is 0, or $(0, 0)$.

- Write the algebraic equation of the line.

The equation of a line can be written in the form $y = mx + b$, where m is the slope of the line and b is the y -intercept. The equation of the line is $y = \frac{1}{16}x + 0$ or $y = \frac{1}{16}x$.

- What is the slope of a line with the equation $y = -x + 7$?

If the equation of a line is in the form $y = mx + b$, m is the slope of the line.

The slope of the line $y = -x + 7$ is -1 .

- What is the y -intercept of a line with the equation $y = 3x - 2$?

If the equation of a line is in the form $y = mx + b$, then b is the y -intercept.

The y -intercept of $y = 3x - 2$ is -2 .

UNIT 6 • DESCRIBING DATA

Lesson 3: Interpreting Linear Models

Instruction

Connection to the Lesson

- In this lesson, students will need to know how to determine the slope and y -intercept of a linear function using both graphical and algebraic representations.
- This warm-up will remind students how to determine both slope and y -intercept using either representation.
- Students will interpret these values in relation to the real-world model the linear function represents.