LESSON MAKER PRO

Slope Story Lab

Read the rate and starting value.

GRADE 8 · MA.8.AR.3.5

MA.8.AR.3.5 "Given a real-world context, determine and interpret the slope and y-intercept of a two-variable linear equation from a written description, a table, a graph or an equation in slope-intercept form."

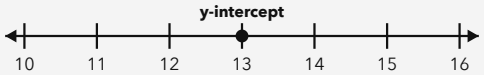
NAME _____ DATE _____

SLOPE AND INTERCEPT

In y = mx + b, m is the slope, or change in y for each 1 change in x. The y-intercept, b, is the starting value when x = 0.

WORKED EXAMPLE

Use the equation and marked y-intercept. Identify the slope and y-intercept of y = -9x + 13.



1. m = -9, so the slope is -9.
2. b = 13, so the y-intercept is 13.
3. The marked point confirms the y-intercept.

Answer: slope = -9; y-intercept = 13

PRACTICE 4 problems

1 For y = -4x + 7, identify the slope and y-intercept.

ANSWER _____

2 A table has pairs (0, -1), (1, 3), and (3, 11). Find the slope and y-intercept.

ANSWER _____

3 A school club starts with $6 and earns $4 for each ticket sold. Let x be tickets and y be total dollars. Write an equation. What do the slope and y-intercept mean?

ANSWER _____

4 For y = 1/2x - 7, identify the slope and y-intercept.

ANSWER _____

APPLY IT Show your work

1 Use the table to write an equation for the arcade pass cost, y, after x rides. Interpret the slope and y-intercept.

ARCADE PASS COST

Rides, x	Cost, y
0	$6
1	$10
2	$14
3	$18

ANSWER _____

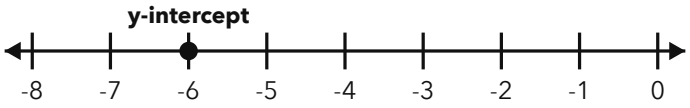
2 A music app charges $7 to join and $3 each month. Let x be months and y be total cost. Write an equation. Interpret the slope and y-intercept.

WORK SPACE

ANSWER _____

CHALLENGE One step up

The number line marks a line's y-intercept. The line also passes through (4, 2). Write the equation in slope-intercept form. Explain how you found the slope.



WORK SPACE AND ANSWER

ANSWER KEY # Slope Story Lab

GRADE 8 · MA.8.AR.3.5

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	For y = -4x + 7, identify the slope and y-intercept.	**slope = -4; y-intercept = 7**
2	A table has pairs (0, -1), (1, 3), and (3, 11). Find the slope and y-intercept.	**slope = 4; y-intercept = -1**
3	A school club starts with $6 and earns $4 for each ticket sold. Let x be tickets and y be total dollars. Write an equation. What do the slope and y-intercept mean?	**y = 4x + 6; slope: $4 per ticket, y-intercept: $6 starting amount**
4	For y = 1/2x - 7, identify the slope and y-intercept.	**slope = 1/2; y-intercept = -7**

PART 2 · APPLY IT

1. **y = 4x + 6; slope: $4 per ride, y-intercept: $6 starting cost** The cost rises by $4 for each ride. At 0 rides, the cost is $6.
2. **y = 3x + 7; slope: $3 per month, y-intercept: $7 joining cost** The monthly rate is 3, and the starting charge is 7.

CHALLENGE

y = 2x - 6; from (-6) to 2 is a rise of 8, and the run is 4, so the slope is 8/4 = 2.

Accept equivalent slope-intercept equations and clear equivalent interpretations. For the challenge, accept any correct explanation using rise 8 and run 4.