LESSON MAKER PRO

Lines Tell Stories

Read and graph rates and starting values

GRADE 7 · 7A.PR.B.6.c

7A.PR.B.6.c "Graph linear relationships, interpreting the slope as the rate of change of the graph and the y-intercept as the initial value."

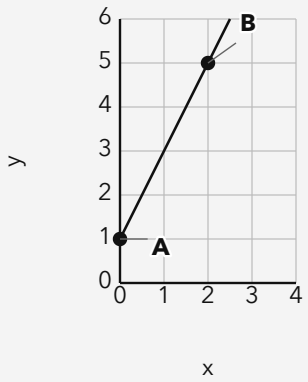
NAME _____ DATE _____

THE BIG IDEA

On a straight-line graph, the slope tells you how much y changes when x increases by 1. The y-intercept is the value of y when x is 0.

WORKED EXAMPLE

Use the graph to find the slope and y-intercept.



1. From A to B, y rises 4 while x increases 2.
2. Slope = 4/2 = 2.
3. At x = 0, the graph crosses the y-axis at 1.

Answer: Slope: 2; y-intercept: 1

PRACTICE 4 problems

1 For y = 3x + 4, find the slope and y-intercept.

ANSWER _____

2 For y = -4x + 7, find the slope and y-intercept.

ANSWER _____

3 A line passes through (0, 6) and (3, 15). Find its slope and y-intercept.

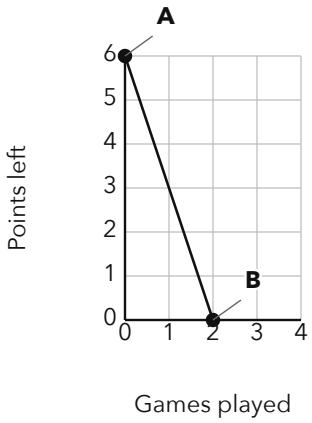
ANSWER _____

4 A line has slope -3 and passes through (3, -4). Find its y-intercept.

ANSWER _____

APPLY IT Show your work

1 The graph shows arcade points left after playing games. How many points did you start with, and how many points does each game use?



ANSWER _____

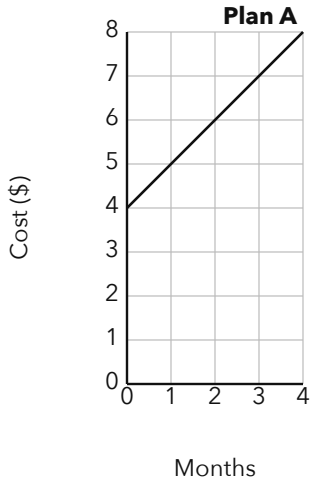
2 A music app charges $5 to join and $4 each month. Write an equation for the total cost y after x months. What do its slope and y-intercept mean?

WORK SPACE

ANSWER _____

CHALLENGE One step up

Plan A is graphed. Plan B costs $3 per month with no starting fee. Graph Plan B. After how many months do the plans cost the same, and what is that cost?



WORK SPACE AND ANSWER

ANSWER KEY

Lines Tell Stories

GRADE 7 · 7A.PR.B.6.c

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	For y = 3x + 4, find the slope and y-intercept.	**Slope: 3; y-intercept: 4**
2	For y = -4x + 7, find the slope and y-intercept.	**Slope: -4; y-intercept: 7**
3	A line passes through (0, 6) and (3, 15). Find its slope and y-intercept.	**Slope: 3; y-intercept: 6**
4	A line has slope -3 and passes through (3, -4). Find its y-intercept.	**5**

PART 2 · APPLY IT

1. **You start with 6 points; each game uses 3 points.** The y-intercept gives the starting points. The slope is (0 - 6)/(2 - 0) = -3 points per game.
2. **y = 4x + 5; the slope is $4 per month, and the y-intercept is the $5 joining cost.** The monthly charge is the rate of change. The joining cost is the total when x = 0.

CHALLENGE

Graph Plan B through (0, 0) and (2, 6). The plans both cost $6 after 2 months.

Accept an equivalent equation for the music app. In the challenge, accept any correctly drawn line through the origin and (2, 6).