LESSON MAKER PRO

Slope Spotters

Find the rate of change in linear relationships.

GRADE 8 · MA.8.AR.3.2

MA.8.AR.3.2 "Given a table, graph or written description of a linear relationship, determine the slope."

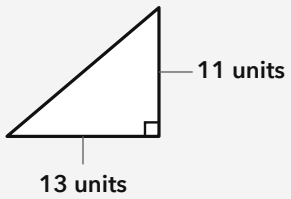
NAME _____ DATE _____

RISE OVER RUN

Slope tells how much y changes for each change in x. Find slope by dividing the vertical change, called rise, by the horizontal change, called run.

WORKED EXAMPLE

Use the slope triangle to determine the slope of the line. Moving from left to right, the line rises 11 units over a run of 13 units.

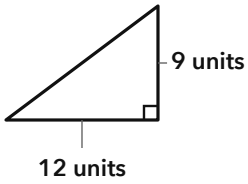


1. Rise = 11 units and run = 13 units.
2. slope = rise/run = 11/13.
3. 11 and 13 have no common factor greater than 1.

Answer: 11/13

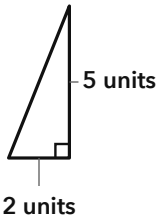
PRACTICE 6 problems

1 Use the slope triangle to determine the slope of the line. Moving from left to right, the line rises 9 units over a run of 12 units.



ANSWER _____

2 Use the slope triangle to determine the slope of the line. Moving from left to right, the line rises 5 units over a run of 2 units.



ANSWER _____

3 A line passes through (-3, 7) and (1, -1). Determine the slope.

ANSWER _____

4 Determine the slope of $y = -4x + 9$.

ANSWER _____

5 A line passes through (2, 9) and (7, 19). Determine the slope.

ANSWER _____

6 In a linear relationship, x increases by 4 while y decreases by 14. Determine the slope.

ANSWER _____

APPLY IT Show your work

1 A music app tracks phone storage used by downloaded songs. Use the table to determine the slope, in megabytes per song.

DOWNLOADED SONGS AND STORAGE USED

Songs, x	Storage used, y (MB)
1	4
3	16
5	28

ANSWER _____

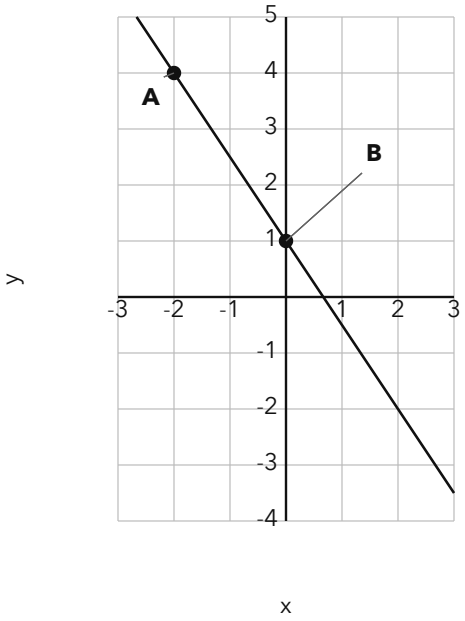
2 At an arcade, a game card has 24 credits. Each game costs 3 credits. Let x be the number of games played and y be the credit balance. Determine the slope, in credits per game.

WORK SPACE

ANSWER _____

CHALLENGE One step up

Use the labeled points on the graph to determine the slope of the line. Explain your reasoning with the rise and run.



WORK SPACE AND ANSWER

ANSWER KEY

Slope Spotters

GRADE 8 · MA.8.AR.3.2

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	Use the slope triangle to determine the slope of the line. Moving from left to right, the line rises 9 units over a run of 12 units.	**3/4**
2	Use the slope triangle to determine the slope of the line. Moving from left to right, the line rises 5 units over a run of 2 units.	**5/2**
3	A line passes through (-3, 7) and (1, -1). Determine the slope.	**-2**
4	Determine the slope of y = -4x + 9.	**-4**
5	A line passes through (2, 9) and (7, 19). Determine the slope.	**2**
6	In a linear relationship, x increases by 4 while y decreases by 14. Determine the slope.	**-7/2**

PART 2 · APPLY IT

1. **6 megabytes per song** Use two rows: (16 - 4) / (3 - 1) = 12/2 = 6. The storage used increases by 6 megabytes for each song.
2. **-3 credits per game** The credit balance decreases by 3 for every increase of 1 game. The slope is -3/1 = -3 credits per game.

CHALLENGE

-3/2; from A to B, y decreases by 3 and x increases by 2, so the slope is -3/2.

Accept equivalent slope forms, such as 9/12 for 3/4 and -14/4 for -7/2. For the challenge, accept any correct rise and run using two points on the line.