LESSON MAKER PRO

Find the Unit Rate

Spot the constant in every representation.

GRADE 7 · 7.RP.A.2b

CCSS.Math.Content.7.RP.A.2b "Identify the constant of proportionality (unit rate) in tables, graphs, equations, diagrams, and verbal descriptions of proportional relationships."

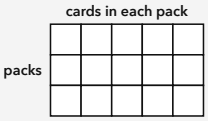
NAME _____ DATE _____

THE BIG IDEA

For a proportional relationship, divide the output by the input. The same quotient each time is the constant of proportionality, or unit rate.

WORKED EXAMPLE

The array models equal packs of trading cards. Find the constant of proportionality in cards per pack.

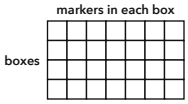


1. There are 3 packs.
2. There are 15 cards total.
3. 15 / 3 = 5 cards per pack.

Answer: 5 cards per pack

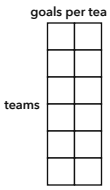
PRACTICE 4 problems

1 The array models markers packed equally in boxes. Find the constant of proportionality in markers per box.



ANSWER _____

2 The array models equal teams. Find the constant of proportionality in goals per team.



ANSWER _____

3 The equation c = 9x gives cost c in dollars for x notebooks. What is the constant of proportionality?

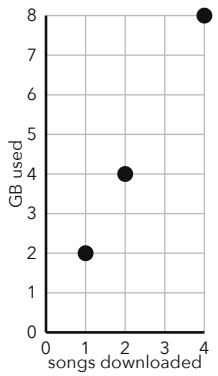
ANSWER _____

4 A file transfers 32 MB in 8 seconds at a constant rate. What is the unit rate?

ANSWER _____

APPLY IT Show your work

1 The graph shows data used by a music app. Find the constant of proportionality in GB per song.



ANSWER _____

2 A gaming channel gains 28 followers after 7 posts at a constant rate. Find the unit rate in followers per post.

WORK SPACE

ANSWER _____

CHALLENGE One step up

A video editor exports 16 clips in 4 minutes. A second editor exports 42 clips in 6 minutes. Both rates are constant. Which editor has the larger constant of proportionality? Find both unit rates and explain.

WORK SPACE AND ANSWER

ANSWER KEY

Find the Unit Rate

GRADE 7 · 7.RP.A.2b

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	The array models markers packed equally in boxes. Find the constant of proportionality in markers per box.	**7 markers per box**
2	The array models equal teams. Find the constant of proportionality in goals per team.	**2 goals per team**
3	The equation c = 9x gives cost c in dollars for x notebooks. What is the constant of proportionality?	**9 dollars per notebook**
4	A file transfers 32 MB in 8 seconds at a constant rate. What is the unit rate?	**4 MB per second**

PART 2 · APPLY IT

1. **2 GB per song** Divide GB used by songs downloaded. Each plotted point has y / x = 2.
2. **4 followers per post** Divide 28 followers by 7 posts.

CHALLENGE

The second editor. First editor: 4 clips per minute. Second editor: 7 clips per minute. Since 7 is greater than 4, the second editor has the larger constant of proportionality.

Accept equivalent unit-rate wording when the units are in the correct order. For the challenge, require both rates and a comparison.