LESSON MAKER PRO

Ratio Check

Decide when two quantities grow at the same rate.

GRADE 7 · 7A.PR.A.2.a

7A.PR.A.2.a "Use equivalent ratios displayed in a table or in a graph of the relationship in the coordinate plane to determine whether a relationship between two quantities is proportional."

NAME _____ DATE _____

THE BIG IDEA

A relationship is proportional when y/x is the same for every pair with x not equal to 0. On a graph, its points lie on a straight line through (0, 0).

WORKED EXAMPLE

Does the table show a proportional relationship?

x	y
9	27
18	54

1. 27/9 = 3.
2. 54/18 = 3.
3. The unit rates match.

Answer: Yes. The unit rate is 3.

PRACTICE 4 problems

1 For (x, y) pairs (1, 2), (2, 4), and (4, 8), is y proportional to x? If yes, give the unit rate.

ANSWER _____

2 For (x, y) pairs (2, 5), (4, 11), and (6, 15), is y proportional to x? If yes, give the unit rate.

ANSWER _____

3 For (x, y) pairs (0, 0), (2, 7), and (4, 14), is y proportional to x? If yes, give the unit rate.

ANSWER _____

4 For (x, y) pairs (1, 4), (2, 8), and (3, 13), is y proportional to x? If yes, give the unit rate.

ANSWER _____

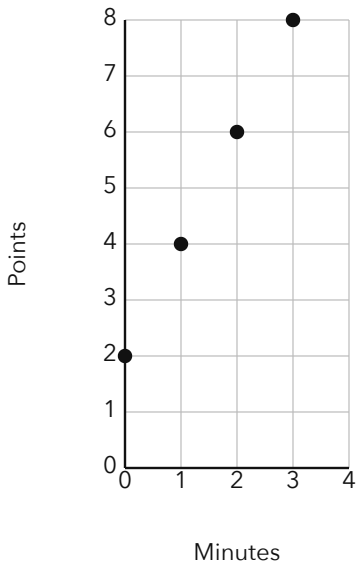
APPLY IT Show your work

1 In a game, you trade coins for boosts. Does the table show a proportional relationship? Give the unit rate if it does.

Boosts	Coins
1	5
2	10
4	20

ANSWER _____

2 A game awards points based on minutes played. Does the graph show a proportional relationship? Explain briefly.



ANSWER _____

CHALLENGE One step up

Does every row follow one proportional relationship? Name the row that does not, and give the value that would fix it.

x	y
2	5
4	10
6	15
8	19

WORK SPACE AND ANSWER

ANSWER KEY

Ratio Check

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PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	For (x, y) pairs (1, 2), (2, 4), and (4, 8), is y proportional to x? If yes, give the unit rate.	**Yes, 2.**
2	For (x, y) pairs (2, 5), (4, 11), and (6, 15), is y proportional to x? If yes, give the unit rate.	**No.**
3	For (x, y) pairs (0, 0), (2, 7), and (4, 14), is y proportional to x? If yes, give the unit rate.	**Yes, 7/2.**
4	For (x, y) pairs (1, 4), (2, 8), and (3, 13), is y proportional to x? If yes, give the unit rate.	**No.**

PART 2 · APPLY IT

1. **Yes, 5 coins per boost.** Divide coins by boosts in each row. Each unit rate is 5.
2. **No. The graph includes (0, 2), not (0, 0).** A proportional relationship must have 0 points at 0 minutes. This graph shows 2 points at 0 minutes.

CHALLENGE

No. The row (8, 19) does not fit. Change 19 to 20.

Accept equivalent unit rates, such as 3.5 for 7/2. For the challenge, accept any explanation that the other rows have a unit rate of 5/2.