LESSON MAKER PRO

Ratio Pattern Check

Decide when two quantities are proportional.

GRADE 7 · 7.RP.2a

7.RP.2a "Recognize and represent proportional relationships between quantities. Decide whether two quantities in a table or graph are in a proportional relationship."

NAME _____ DATE _____

CHECK THE RATIO

In a proportional relationship, y/x is the same for every pair with x not equal to 0. If x is 0, y must also be 0. On a graph, the points lie on a straight line through (0, 0).

WORKED EXAMPLE

Is the table proportional?

x	y
7	21
14	42
28	84

1. 21/7 = 3.
2. 42/14 = 3.
3. 84/28 = 3.
4. Each y/x is 3.

Answer: Yes. The relationship is proportional.

PRACTICE 4 problems

1 Are (2, 8), (4, 16), and (6, 24) proportional?

ANSWER _____

2 Are (2, 10), (4, 20), and (6, 32) proportional?

ANSWER _____

3 Are (5, 10), (10, 20), and (15, 30) proportional?

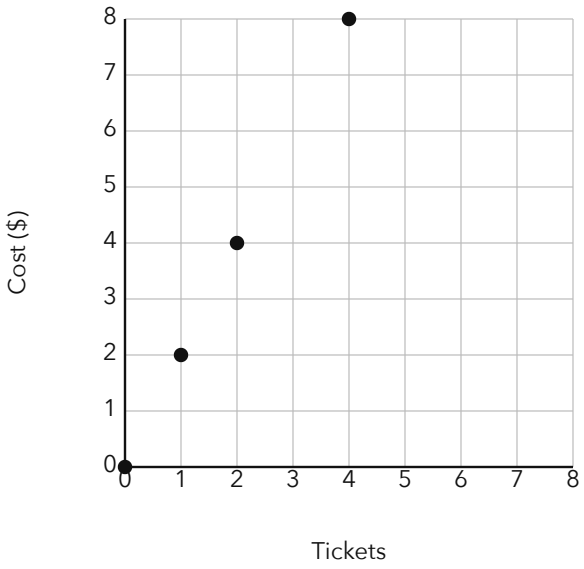
ANSWER _____

4 Are (0, 5), (2, 9), and (4, 13) proportional?

ANSWER _____

APPLY IT Show your work

1 At game night, x tickets cost y dollars. Is the graph proportional? What is the price per ticket?



ANSWER _____

2 A video app uses the data shown. Is data used proportional to hours watched? Explain briefly.

Hours	Data used (MB)
0	0
1	18
2	36
4	76

ANSWER _____

CHALLENGE One step up

One pair in (0, 0), (2, 8), (4, 16), (6, 25) breaks a proportional pattern. Which pair? Replace it and explain.

WORK SPACE AND ANSWER

ANSWER KEY

Ratio Pattern Check

GRADE 7 · 7.RP.2a

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	Are (2, 8), (4, 16), and (6, 24) proportional?	**Yes.**
2	Are (2, 10), (4, 20), and (6, 32) proportional?	**No.**
3	Are (5, 10), (10, 20), and (15, 30) proportional?	**Yes.**
4	Are (0, 5), (2, 9), and (4, 13) proportional?	**No.**

PART 2 · APPLY IT

1. **Yes, $2 per ticket.** The points lie on a straight line through (0, 0). At (1, 2), the cost is $2 for one ticket.
2. **No. The data use per hour is not constant.** The first two nonzero rows give 18 MB per hour, but 76/4 = 19 MB per hour.

CHALLENGE

The pair (6, 25) breaks the pattern because the other nonzero pairs have y/x = 4. Replace it with (6, 24).

For practice items, accept yes or no without a written reason. For the challenge, accept any explanation showing that the constant ratio is 4.