LESSON MAKER PRO

Ratio Reality Check

Decide when two quantities grow at the same rate.

GRADE 7 · 7.RP.A.2.a

7.RP.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 nonzero x. Its graph must also include (0,0).

WORKED EXAMPLE

Is the relationship in the table proportional?

x	y
10	70
20	140
30	210

1. 70/10 = 7.
2. 140/20 = 7 and 210/30 = 7.
3. Every y/x ratio is 7.

Answer: Yes, it is proportional.

PRACTICE 4 problems

1 Proportional? x: 1, 2, 3; y: 8, 16, 24.

ANSWER _____

2 Proportional? If not, give two different y/x ratios. x: 1, 2, 3; y: 5, 10, 16.

ANSWER _____

3 Proportional? x: 2, 4, 6; y: 9, 18, 27.

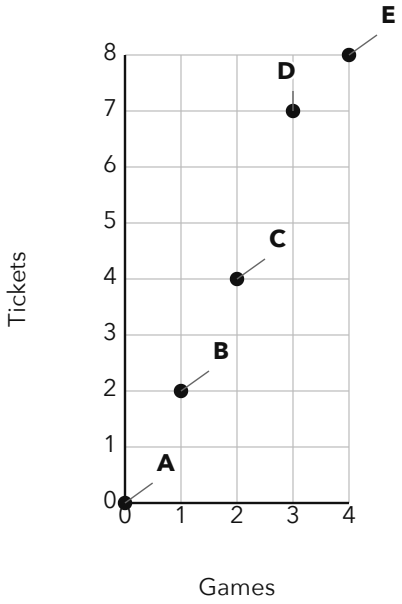
ANSWER _____

4 Proportional? If not, give two different y/x ratios. x: 3, 6, 9; y: 12, 24, 39.

ANSWER _____

APPLY IT Show your work

1 An arcade tracks games played and tickets won. Does the graph show a proportional relationship? Explain using two points.



ANSWER _____

2 A club sells sticker packs at the prices shown. Is price proportional to the number of packs? If so, what is the price per pack?

STICKER PACKS

Packs	Price ($)
1	3
2	6
3	9
4	12

ANSWER _____

CHALLENGE One step up

For (x,y) pairs (0,2), (1,6), and (2,12), every nonzero x has the same y/x ratio. Is the relationship proportional? Explain.

WORK SPACE AND ANSWER

ANSWER KEY

Ratio Reality Check

GRADE 7 · 7.RP.A.2.a

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	Proportional? x: 1, 2, 3; y: 8, 16, 24.	**Yes.**
2	Proportional? If not, give two different y/x ratios. x: 1, 2, 3; y: 5, 10, 16.	**No; 5/1 = 5, but 16/3 is not 5.**
3	Proportional? x: 2, 4, 6; y: 9, 18, 27.	**Yes.**
4	Proportional? If not, give two different y/x ratios. x: 3, 6, 9; y: 12, 24, 39.	**No; 12/3 = 4, but 39/9 = 13/3.**

PART 2 · APPLY IT

1. **No. The points (1,2) and (3,7) have different tickets-per-game ratios.** Compare 2/1 = 2 with 7/3. Since the ratios differ, the relationship is not proportional.
2. **Yes; $3 per pack.** Each price divided by the number of packs is 3, so the relationship is proportional.

CHALLENGE

No. When x = 0, y = 2, but a proportional relationship must include (0,0).

Accept any correct pair of unequal ratios for a nonproportional relationship. For the challenge, accept an explanation that the pair (0,2) rules out proportionality.