LESSON MAKER PRO

Ratio Reality Check

Test ratios in tables, bars, and graphs.

GRADE 7 · 7.RP.A.2a

CCSS.Math.Content.7.RP.A.2a "Decide whether two quantities are in a proportional relationship, e.g., by testing for equivalent ratios in a table or graphing on a coordinate plane and observing whether the graph is a straight line through the origin."

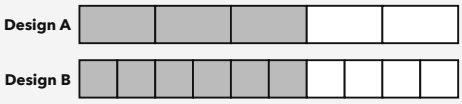
NAME _____ DATE _____

CHECK THE RATIOS

Two quantities are proportional when their ratios stay equivalent. On a graph, a proportional relationship makes a straight line that passes through the origin.

WORKED EXAMPLE

The fraction bars show shaded tiles out of all tiles in two designs. Are shaded tiles proportional to total tiles?



1. Write the ratios: 3/5 and 6/10.
2. Simplify 6/10 to 3/5.
3. The ratios are equivalent.

Answer: Yes, 3/5 = 6/10.

PRACTICE 4 problems

1 For (x, y): (4, 7), (8, 14), and (12, 21), are x and y proportional? State y/x.

ANSWER _____

2 For (x, y): (2, 9), (4, 18), and (8, 35), are x and y proportional? Explain.

ANSWER _____

3 A graph includes (0, 0), (7, 11), (14, 22), and (21, 33). Is the relationship proportional?

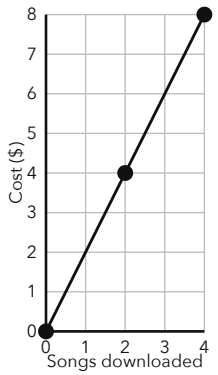
ANSWER _____

4 A movie club records (tickets, cost): (9, 4), (18, 8), and (27, 13). Is cost proportional to tickets? Explain.

ANSWER _____

APPLY IT Show your work

1 A music store graph shows songs downloaded and dollars paid. Is cost proportional to songs? Give an equation.



ANSWER _____

2 The bars show Team Pixel's wins. Is wins proportional to games? Explain.



ANSWER _____

CHALLENGE One step up

For x values 4, 8, 12, and 16, the y values are 7, 14, 21, and k. What value of k makes the relationship proportional? Explain.

WORK SPACE AND ANSWER

ANSWER KEY

Ratio Reality Check

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PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	For (x, y): (4, 7), (8, 14), and (12, 21), are x and y proportional? State y/x.	**Yes; y/x = 7/4.**
2	For (x, y): (2, 9), (4, 18), and (8, 35), are x and y proportional? Explain.	**No; 9/2 = 18/4, but 35/8 is not 9/2.**
3	A graph includes (0, 0), (7, 11), (14, 22), and (21, 33). Is the relationship proportional?	**Yes; the points make a line through the origin, and y/x = 11/7.**
4	A movie club records (tickets, cost): (9, 4), (18, 8), and (27, 13). Is cost proportional to tickets? Explain.	**No; 4/9 = 8/18, but 13/27 is not 4/9.**

PART 2 · APPLY IT

1. **Yes; y = 2x.** The line is straight and passes through the origin. Its cost-to-songs ratio is 2 dollars per song.
2. **Yes; 2/4 = 4/8 = 1/2.** Both win-to-game ratios simplify to 1/2, so the relationship is proportional.

CHALLENGE

k = 28; each y/x ratio must equal 7/4, so k/16 = 7/4.

Accept equivalent ratios and equations written as y = 2x. For explanations, accept a correct comparison of ratios or a statement that the graph is a line through the origin.