LESSON MAKER PRO

Rate Check

Decide when two quantities have a constant ratio.

GRADE 6 · 6.PFA.2.c

6.PFA.2.c "Determine whether a proportional relationship exists between two quantities, when given a table of values, context, or graph."

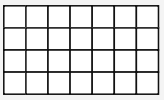
NAME _____ DATE _____

SPOT THE CONSTANT RATIO

Two quantities are proportional when y/x stays the same for every pair with x not equal to 0. A proportional relationship can be written as y = kx, with no starting amount added.

WORKED EXAMPLE

The array shows equal rows of tiles. Let x be the number of rows and y be the total number of tiles. If each row stays the same length, is y proportional to x?



1. x counts the rows.
2. Each row has 7 tiles.
3. The ratio y/x is always 7.

Answer: Yes. y = 7x.

PRACTICE 4 problems

1 For x: 1, 3, 5 and y: 6, 18, 30, is y proportional to x? Write an equation.

ANSWER _____

2 For x: 1, 3, 5 and y: 8, 24, 41, is y proportional to x? State why.

ANSWER _____

3 A game gives 5 points for each level passed. Is score y proportional to levels x? Write an equation.

ANSWER _____

4 At game night, 1 ticket costs $6, 3 tickets cost $18, and 5 tickets cost $30. Is total cost y proportional to tickets x? Write an equation.

ANSWER _____

APPLY IT Show your work

1 A music app tracks songs downloaded and storage used. Use the table to decide whether storage y is proportional to songs x. Write an equation if it is.

MUSIC DOWNLOADS

Songs, x	Storage (MB), y
1	12
3	36
5	60
6	72

ANSWER _____

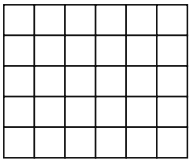
2 A streaming club charges a $5 sign-up fee and $6 each month. Is total cost y proportional to months x? Explain.

WORK SPACE

ANSWER _____

CHALLENGE One step up

Look at the array. Let x be the number of rows and y be the total number of squares. If each row stays the same length, determine whether y is proportional to x. Explain and write an equation.



WORK SPACE AND ANSWER

ANSWER KEY

Rate Check

GRADE 6 · 6.PFA.2.c

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	For x: 1, 3, 5 and y: 6, 18, 30, is y proportional to x? Write an equation.	**Yes. y = 6x.**
2	For x: 1, 3, 5 and y: 8, 24, 41, is y proportional to x? State why.	**No. 8/1 = 8, but 41/5 is not 8.**
3	A game gives 5 points for each level passed. Is score y proportional to levels x? Write an equation.	**Yes. y = 5x.**
4	At game night, 1 ticket costs $6, 3 tickets cost $18, and 5 tickets cost $30. Is total cost y proportional to tickets x? Write an equation.	**Yes. y = 6x.**

PART 2 · APPLY IT

1. **Yes. y = 12x.** Each storage-to-song ratio is 12 MB per song, so the relationship is proportional.
2. **No. y = 6x + 5, so the cost is $5 when x = 0.** A proportional relationship must have no starting amount. The sign-up fee adds $5 before any months are paid for.

CHALLENGE

Yes. Each row has 6 squares, so y/x = 6 and y = 6x.

Accept equivalent equations with the same coefficient, such as y/6 = x. For proportional relationships, accept a correct constant-ratio explanation; for nonproportional relationships, students must identify the changing ratio or starting amount.