



Recognizing proportional relationships

GRADE 7 MATH

Name _____

Date _____

Work in order. Show every ratio you test before concluding. One skill: **proportional relationships**.

WORKED EXAMPLE

Proportional means $y \div x$ is **constant** for every pair. Call that constant **k** and the rule is $y = kx$. Equivalent test: the graph passes through **(0, 0)**. Steady growth alone is not enough.

1. For the pair (2, 6), find $y \div x$.

FLUENCY

Show your thinking

Answer

2. For the pair (3, 9), find $y \div x$.

FLUENCY

Show your thinking

Answer

3. For the pair (5, 15), find $y \div x$.

FLUENCY

Show your thinking

Answer

4. Those three pairs are proportional. Using k from above, find y when $x = 10$. **APPLICATION**

Show your thinking

Answer

5. A table pairs x with y : $(1, 1)$, $(2, 4)$, $(3, 9)$. Is it proportional? Show the ratios. **APPLICATION**

Show your thinking

Answer

6. Write out the three ratios from question 5 in order. What pattern do you notice, and why does it rule out proportionality? **REASONING**

Show your thinking

Answer

7. A table pairs x with y : (4, 2), (10, 5), (14, 7). Find k .

APPLICATION

Show your thinking

Answer

8. Using that k , find y when $x = 20$.

APPLICATION

Show your thinking

Answer

9. Two students test $y = 2x + 3$. One says “it adds 2 each time so it is proportional.” The other checks $x = 0$ and says it is not. Who is right, and what test settles it?

REASONING

Show your thinking

Answer