

Grade 7 - Proportional Relationships and $y = kx$ - Test Answer Key

Common Core 7.RP.A.2 · maths-pdf.fr/en/

Use this answer key and scoring guide to grade the proportional relationships test. Each solution shows the full work, and the scoring note explains how the points are awarded. Give partial credit for correct steps even when the final answer is wrong.

Grade 7 · Common Core State Standards: **7.RP.A.2**

Question 1 - Table test [2 pts]

$$7.5 \div 3 = 2.5, 12.5 \div 5 = 2.5, 20 \div 8 = 2.5.$$

Yes; $y = 2.5x$

Scoring: 1 point for comparing all the ratios; 1 point for the conclusion and the equation.

Question 2 - Find k [2 pts]

$$k = 14 \div 8 = 1.75; y = 1.75x.$$

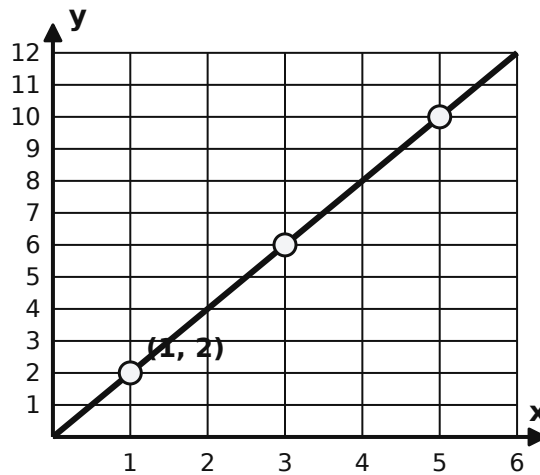
$$1.75 \times 20 = 35$$

$k = 1.75$; $y = 1.75x$; $y = 35$

Scoring: 1 point for k and the equation; 1 point for $y = 35$.

Question 3 - Graph test [2 pts]

- a. The graph is a straight line through the origin (0, 0).
- b. $k = 6 \div 3 = 2$, so $y = 2x$.



The point (1, 2) is marked.

Scoring: 1 point for each part.

Question 4 - Complete a table [2 pts]

$$6.5 \times 2 = 13; 6.5 \times 5 = 32.5; 6.5 \times 12 = 78.$$

13, 32.5, 78

Scoring: 1 point for using multiplication by 6.5; 1 point for all three correct values. Deduct nothing if the dollar sign is missing.

Question 5 - Meaning of a point [2 pts]

$$k = 3 \div 4 = 0.75: \$0.75 \text{ per pound.}$$

$$0.75 \times 10 = 7.5.$$

\$0.75; \$7.50

Scoring: 1 point for the unit price; 1 point for the cost of 10 pounds.

Question 6 - Compare plans [2 pts]

$$y = 8x \text{ and } y = 6x + 5.$$

With 0 cars the first costs \$0 and the second costs \$5, so only the first is proportional.

$y = 8x$ is proportional

Scoring: 1 point for both equations; 1 point for the correct choice with a reason.

Question 7 - Fraction table [2 pts]

$$k = \frac{1}{6} \div \frac{1}{4} = \frac{1}{6} \times 4 = \frac{2}{3}.$$

$$\frac{2}{3} \times \frac{1}{2} = \frac{1}{3} \text{ and } \frac{2}{3} \times 1 = \frac{2}{3}.$$

x	1/4	1/2	1
y	1/6	1/3	2/3

Completed table.

Scoring: 1 point for k ; 1 point for both missing values.

Question 8 - Dog walking [3 pts]

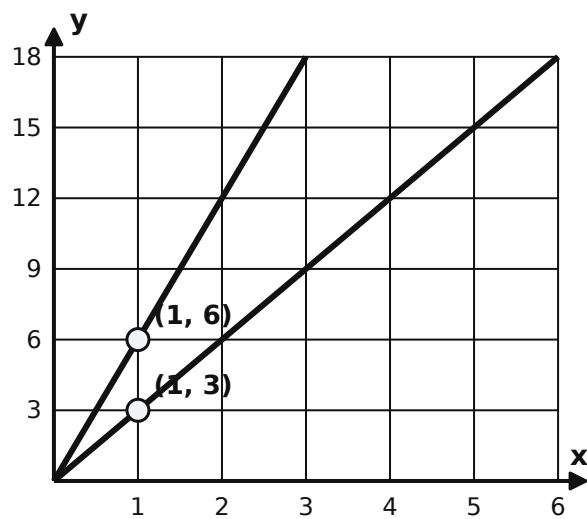
- a. $k = 60 \div 8 = 7.5$, so $y = 7.5x$.
- b. $7.5 \times 5 = 37.5$, so \$37.50.
- c. $150 \div 7.5 = 20$ hours.

$y = 7.5x$; **\$37.50; 20 hours**

Scoring: 1 point for each part.

Question 9 - Two lines [3 pts]

- a. A: $12 \div 2 = 6$. B: $12 \div 4 = 3$.
- b. $y = 6x$ and $y = 3x$.
- c. $30 - 15 = 15$, so line A is greater by 15.



Unit rate points.

Scoring: 1 point for each part.

Total
20 points