

Grade 8 - Proportional Relationships and Slope - Quiz

Common Core 8.EE.B.5 · maths-pdf.fr/en/

Name: _____ Class: _____ Date: ____/____/____

Pick the best answer for each of the 10 questions about proportional relationships, unit rates and slope on graphs, tables and equations (Common Core 8.EE.B.5). Read each question carefully, then read the explanation to learn from any mistake.

Grade 8 · Common Core State Standards: **8.EE.B.5**

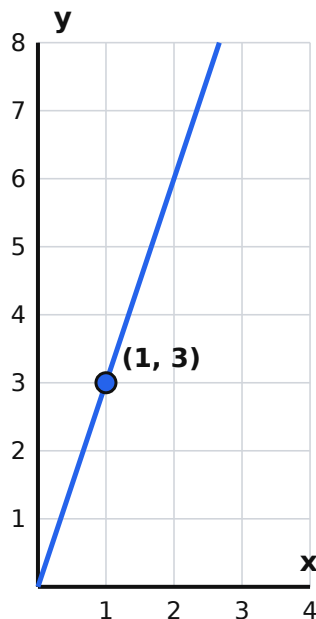
Questions

Question 1

Which equation is proportional?

- A. $y = 7x + 2$
- B. $y = x + 7$
- C. $y = 7x$
- D. $y = 7 - x$

Question 2



A line through the origin.

What is the unit rate shown?

- A. 3
- B. $\frac{1}{3}$
- C. 1
- D. 4

Question 3

What is the slope of the line through (0,0) and (6,9)?

- A. $\frac{3}{2}$
- B. $\frac{2}{3}$
- C. 3
- D. 15

Question 4

A table has $x = 2, 5, 8$ and $y = 6, 15, 24$. What is the equation?

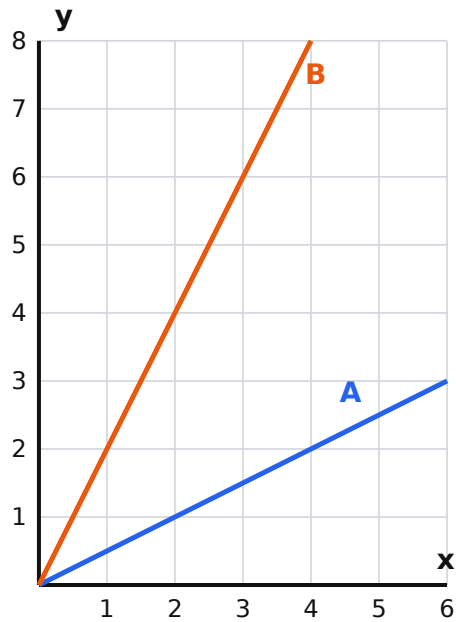
- A. $y = x + 4$
- B. $y = 3x$
- C. $y = 2x + 2$
- D. $y = \frac{1}{3}x$

Question 5

Which table is NOT proportional?

- A. x: 1, 2, 3 and y: 4, 8, 12
- B. x: 2, 4, 6 and y: 1, 2, 3
- C. x: 1, 2, 3 and y: 4, 7, 10
- D. x: 3, 6, 9 and y: 5, 10, 15

Question 6



Two lines.

Which statement is true?

- A. A is steeper than B
- B. B is steeper than A
- C. They have the same slope
- D. A has the greater unit rate

Question 7

A car travels 150 miles in 3 hours at a constant speed. How far does it go in 5 hours?

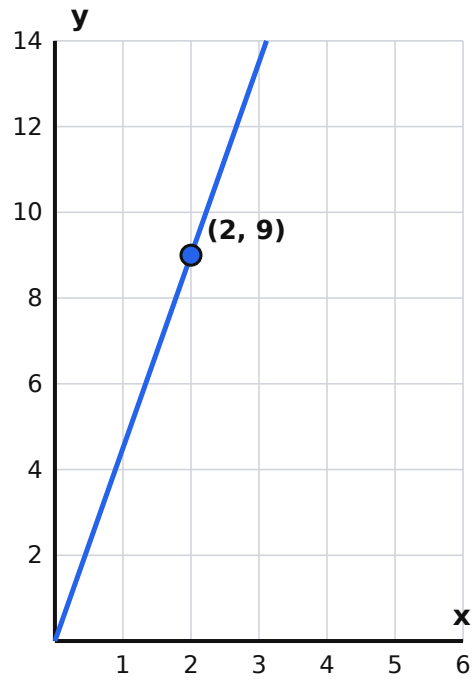
- A. 200 miles
- B. 450 miles
- C. 55 miles
- D. 250 miles

Question 8

The line $y = kx$ passes through (4,10). What is k ?

- A. 0.4
- B. 6
- C. 14
- D. 2.5

Question 9



Cost after x hours.

A kayak rental follows the line. What is the cost for 5 hours?

- A. \$18.00
- B. \$22.50
- C. \$11.00
- D. \$45.00

Question 10

Which is the slope of a line through the origin that goes down to the right through $(3, -6)$?

- A. -2
- B. 2
- C. $-\frac{1}{2}$
- D. -3

Answers

1. **C** - Only $y = kx$ has no starting amount and passes through the origin.
2. **A** - The y-value at $x = 1$ is 3. Reversing the ratio gives $1/3$.
3. **A** - Slope = rise over run = $9/6 = 3/2$. Flipping rise and run gives $2/3$.
4. **B** - $6/2 = 15/5 = 24/8 = 3$.
5. **C** - The ratios y/x are 4, 3.5 and 3.33, so they are not constant.
6. **B** - Slope of B is 2 and slope of A is $1/2$, so B is steeper.
7. **D** - Rate = 50 mph, and $50 \times 5 = 250$. Adding 2 hours to 150 miles is a common mistake.
8. **D** - $k = 10 \div 4 = 2.5$.
9. **B** - Hourly rate = $9/2 = 4.50$, and $5 \times 4.50 = 22.50$.
10. **A** - Rise = -6 over run = 3, so the slope is -2.

Remember

- Equation: $y = kx$, where $k = \frac{y}{x}$ is the unit rate.
- The graph is a straight line through the origin (0,0).
- Slope = $\frac{\text{rise}}{\text{run}}$, the same between any two points on the line.
- A greater unit rate means a steeper line.
- In a table, check that $\frac{y}{x}$ is constant.