

IS IT A PROPORTION?

QUESTIONS 1–5

1

Q1. For each pair, decide whether the two ratios form a proportion.

(a) $\frac{2}{3}$ and $\frac{4}{6}$

(b) $\frac{3}{5}$ and $\frac{4}{6}$

(c) $\frac{6}{9}$ and $\frac{8}{12}$

(d) $\frac{5}{8}$ and $\frac{15}{24}$

2

Q2. Is $\frac{15}{20} = \frac{9}{12}$ a proportion? Show the cross-product check.

3

Q3. Is $\frac{3}{8} = \frac{5}{12}$ a proportion?

4

Q4. Alex says $\frac{4}{10} = \frac{6}{15}$ is a proportion.

Jamie says it is not. Who is right, and why?

5

Q5. Which ratio is proportional to $\frac{5}{8}$?

(A) $\frac{10}{15}$

(B) $\frac{15}{24}$

(C) $\frac{20}{30}$

(D) $\frac{25}{32}$



SCALE-FACTOR METHOD

QUESTIONS 6–10

Q6. Solve for x:

$$\frac{3}{5} = \frac{x}{20}$$

Q7. Solve for x:

$$\frac{4}{7} = \frac{12}{x}$$

Q8. Solve for x:

$$\frac{21}{x} = \frac{7}{2}$$

Q9. Solve for x:

$$\frac{x}{9} = \frac{20}{45}$$

Q10. Solve for x:

$$\frac{6}{x} = \frac{24}{40}$$

SOLVE THE PROPORTION

QUESTIONS 11–15

- 11** Q11. Solve for x : $\frac{2}{3} = \frac{10}{x}$. Then verify by simplifying your answer.

$$\frac{2}{3} = \frac{10}{x}$$

- 12** Q12. Solve for x using cross-multiplication: $\frac{4}{9} = \frac{12}{x}$.

$$\frac{4}{9} = \frac{12}{x}$$

- 13** Q13. Solve for x : $\frac{5}{8} = \frac{x}{24}$.

$$\frac{5}{8} = \frac{x}{24}$$

- 14** Q14. Solve for x : $\frac{7}{x} = \frac{3}{12}$.

$$\frac{7}{x} = \frac{3}{12}$$

- 15** Q15. Solve for x : $\frac{2.5}{1} = \frac{x}{6}$.

$$\frac{2.5}{1} = \frac{x}{6}$$



PROPORTIONS IN ACTION

QUESTIONS 16–20

16 Q16. Solve for x : $\frac{x+1}{6} = \frac{4}{3}$.

17 Q17. Verify $x = 10$ for $\frac{3}{5} = \frac{6}{x}$ using both cross-multiplication and scale factor.

18 Q18. A recipe uses 2 cups of flour for every 3 cookies. How many cups of flour are needed for 12 cookies?

19 Q19. A car drives 90 miles in 2 hours at a steady speed. At the same rate, how far does the car go in 5 hours?

20 Q20. On a map, 1 inch represents 25 miles. How many miles apart are two cities that are 4.5 inches apart on the map?

REAL-LIFE PROPORTIONS

QUESTIONS 21–25



- 21.** Q21. If 3 T-shirts cost \$24, how much do 8 T-shirts cost at the same unit price?



- 22.** Q22. A photocopier prints 45 pages in 3 minutes at a steady rate. How many pages does it print in 8 minutes?



- 23.** Q23. A recipe for 6 servings calls for $\frac{2}{3}$ cup of sugar. How much sugar is needed for 9 servings?



- 24.** Q24. Two triangles are similar. The smaller triangle has sides 3, 4, and 5. The larger triangle's shortest side is 9. Find the other two side lengths.



- 25.** Q25. A worker earns \$54 for 4 hours of work at a fixed hourly rate. How long must she work to earn \$189? Round to the nearest hour if needed.