

Solving Proportion Word Problems

Chapter 7: Proportional Reasoning–1 · Topic 2

Key Concept

For example, if a recipe for 4 people needs 2 cups of rice, finding the rice needed for 10 people involves setting up the proportion $\frac{2}{4} = \frac{x}{10}$, then cross-multiplying: $2 \times 10 = 4 \times x$, giving $20 = 4x$, so $x = 5$ cups. This systematic cross-multiplication approach removes guesswork from proportion problems and is a technique that remains useful throughout mathematics, science, and everyday practical calculations like scaling recipes or maps.

Quick Revision Notes

- Proportion word problems use equal ratios between two related quantity pairs.
- Cross-multiplication solves for the unknown value in a proportion.
- Example: $\frac{2}{4} = \frac{x}{10} \rightarrow$ cross-multiply $\rightarrow 2 \times 10 = 4x \rightarrow x = 5$.
- This method applies to recipes, speed-distance-time, and many practical scaling problems.

Practice Questions

- 1 A recipe for 4 people needs 2 cups of rice. How much is needed for 10 people?
- 2 If a map's scale shows 1cm=5km, find the actual distance for a 6cm map measurement.
- 3 Set up and solve a proportion for: 'If 6 workers can build a wall in some time, how much material would 12 workers need for the same wall?'