

Ratio and Proportion

Chapter 4: Ratio and Proportion · Topic 1

Key Concept

A ratio $a:b$ compares two quantities, and it can be simplified to its lowest terms just like a fraction.

A proportion states that two ratios are equal, written as $a:b=c:d$, useful for solving problems involving scaling or comparison.

Continued proportion involves three quantities where $a:b=b:c$, with b being the mean proportional, calculated as $b=\sqrt{ac}$.

Direct and inverse proportion describe relationships where quantities increase together or one increases as the other decreases.

Quick Revision Notes

- Ratio $a:b$ compares two quantities.
- Can be simplified like a fraction.
- Proportion: two ratios equal, $a:b=c:d$.
- Useful for scaling, comparison problems.
- Continued proportion: $a:b=b:c$.
- b is mean proportional, $b=\sqrt{ac}$.
- Direct proportion: quantities increase together.
- Inverse proportion: one increases, other decreases.

Practice Questions

- 1 Simplify the ratio 18:24.
- 2 Find the mean proportional between 3 and 27.
- 3 Solve x for $2:5=x:20$ (proportion).
- 4 Discuss an example of direct proportion.
- 5 Discuss an example of inverse proportion.
- 6 Explain ratio and proportion in your own words.