

Perfect Cubes

Chapter 1: A Square and A Cube · Topic 2

Key Concept

Cube numbers relate directly to the volume of a cube-shaped object, since $\text{volume} = \text{side}^3$ (side length cubed) — this is why doubling a cube's side length results in its volume becoming 8 times larger ($2^3=8$), not just twice as large, a common point of confusion. Recognising patterns in cube numbers, like the fact that the cube of an odd number is always odd and the cube of an even number is always even, helps with mental estimation and verification of calculations.

Quick Revision Notes

- A perfect cube is formed by multiplying an integer by itself three times (e.g., 8, 27, 64).
- Cube numbers grow much faster than square numbers as the base increases.
- Volume of a cube = side^3 ; doubling the side makes volume 8 times larger, not 2 times.
- The cube of an odd number is odd; the cube of an even number is even.

Practice Questions

- 1 Find the cube of 5.
- 2 Calculate the volume of a cube with side length 3cm.
- 3 Explain why doubling a cube's side length makes its volume 8 times larger, not 2 times.