

Sets

Chapter 6: Sets · Topic 1

Key Concept

A set can be represented by listing elements, like $\{1,2,3\}$, or by describing a property, like 'even numbers less than 10'.

The union of sets A and B ($A \cup B$) includes all elements in either set, while the intersection ($A \cap B$) includes only shared elements.

The complement of a set A (A') includes all elements in the universal set that are not in A.

Understanding set operations helps us solve problems involving groups, categories, and logical relationships between different collections.

Quick Revision Notes

- A set can be listed or described by property.
- Union ($A \cup B$) includes elements in either set.
- Intersection ($A \cap B$) includes shared elements only.
- Complement (A') includes elements not in A.
- This is relative to a universal set.
- Set operations solve grouping problems.
- They help with logical relationships.
- Venn diagrams often visualise these operations.

Practice Questions

- 1 Find the union of $\{1,3,5\}$ and $\{2,3,4\}$.
- 2 Find the intersection of $\{1,3,5\}$ and $\{2,3,4\}$.
- 3 Discuss the complement of a set with an example.
- 4 Draw a Venn diagram for two sets.
- 5 Solve a real-life problem using set operations.
- 6 Explain union and intersection in your own words.