

Rational Numbers

Chapter 1: Rational Numbers · Topic 1

Key Concept

Rational numbers can be represented on a number line and compared, added, subtracted, multiplied, or divided using fraction rules.

The properties of rational numbers include closure (operations stay within rational numbers), commutativity, and associativity for addition and multiplication.

The additive identity is 0 (a number plus 0 equals itself), and the multiplicative identity is 1 (a number times 1 equals itself).

Understanding these properties helps us manipulate rational numbers correctly and solve more complex mathematical problems.

Quick Revision Notes

- Rational numbers are written as p/q .
- They include positive and negative fractions.
- We can add, subtract, multiply, divide them.
- Closure means operations stay within rational numbers.
- Commutativity and associativity apply to addition/multiplication.
- Additive identity is 0.
- Multiplicative identity is 1.
- These properties help solve complex problems.

Practice Questions

- 1 Give an example demonstrating closure for addition.
- 2 Verify commutativity with $2/3 + 1/4$ and $1/4 + 2/3$.
- 3 Identify the additive identity in an equation.
- 4 Identify the multiplicative identity in an equation.
- 5 Solve two rational number operations.
- 6 Discuss why these properties are useful in maths.