AQA GCSE Mathematics – Number

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Subject: Maths

Grade: KS4

Detailed revision guide for the Number topic in AQA GCSE Mathematics covering definitions, examples, methods, advantages, disadvantages, and practice questions.

Number – AQA GCSE Mathematics (8300)

Key Concepts

- Integers, decimals, fractions, percentages
- Order of operations (BIDMAS)
- Negative numbers and absolute value
- Rounding and significant figures
- Bounds and estimation
- Indices and standard form
- Ratio and proportion basics

Definitions & Examples

- Integer: A whole number, e.g., -2, 0, 7.
- Decimal: Number with digits after a decimal point, e.g., 3.14.
- Fraction: Part of a whole, e.g., 3/4 or 7/2.
- Percentage: Fraction out of 100, e.g., 25% = 0.25.
- Standard Form: Express numbers as a × 10^n, e.g., 3.2 × 10^4.

Methods

- Use BIDMAS for correct order of operations
- Convert between fractions, decimals, and percentages
- Rounding: nearest integer, decimal place, significant figures
- Calculate upper and lower bounds for estimates
- Use powers and roots with indices
- Apply ratios to divide quantities proportionally

Advantages & Disadvantages

- Advantages: Essential for all areas of maths, practical applications, problem solving.

- Disadvantages: Can be tricky to remember conversions, rounding errors possible, careful with negative numbers and bounds.

Practice Questions

- Convert 0.375 to a fraction and percentage.
- Round 3.14159 to 3 significant figures.
- Write 0.00056 in standard form.
- Calculate the upper and lower bounds for 12.4 ± 0.05.
- Evaluate 2^3 × 5^2 ÷ 10.