Year 8 Decimals – Revision Notes

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Year 8 · Maths · Decimal Calculations and Ordering · Key ideas and worked examples

For grown-ups and learners: read each part and try the worked example. Then work through the sheets: Foundation, Developing, Challenge, then Mixed Practice to revise everything. Show your working: it earns marks in tests and helps you spot mistakes.

1. Multiplying decimals

Multiply without the decimal points, then count the decimal places in the question. For 0.7 × 0.06, work out 7 × 6 = 42. There are 1 + 2 = 3 decimal places, so the answer is **0.042**. Estimate first: 4.8 × 3.2 ≈ 5 × 3 = 15, so 15.36 is sensible.

Example: 5.9 × 2.5 = ?
→ Ignore the decimal points: 59 × 25
→ Count the decimal places in the question: 2
→ = 14.75
Answer: 14.75

2. Dividing by a one-decimal-place number

Multiply **both** numbers by 10 so that you divide by a whole number: 8.4 ÷ 0.7 = 84 ÷ 7 = **12**. Dividing by a number between 0 and 1 gives a **bigger** answer.

Example: 38.7 ÷ 0.9 = ?
→ Multiply both numbers by 10: 387 ÷ 9
→ = 43
Answer: 43

3. Comparing and ordering

Change fractions to decimals to compare them: −3/8 = −0.375, which is less than −0.35 because it is further below 0. The symbols **≤** (less than or equal to) and **≥** (greater than or equal to) include the end value. In −1.5 ≤ x < 2, x can be −1.5 but not 2.

Example: Write <, > or = to make this true: 0.6 ? −0.375
→ As decimals: 0.6 and −0.375
→ On a number line, the number further right is greater
Answer: 0.6 > −0.375

Think like a mathematician: test a few cases (**specialising**), look for the rule that always works (**generalising**), and explain why you are sure (**convincing**). When you check someone's working, say what is wrong and how to **improve** it.

Common mistakes: writing 0.3 × 0.2 = 0.6 (it is 0.06). Dividing only one number by 10. Thinking −0.4 > −0.38 because 4 > 3. Forgetting that ≤ includes the end value.