

Rounding and Estimating

Maths

Level 2

Exam-style practice · 11 questions · 31 marks · Non-calculator

Remember

Decimal places (d.p.): 3.4672 → 3.47 (2 d.p.). Look at the next digit: 5 or more rounds up.

Significant figures (s.f.): count from the first non-zero digit. 0.004718 → 0.0047 (2 s.f.). 52,830 → 53,000 (2 s.f.).

Estimating: round every number to 1 s.f., then calculate. $38.7 \times 21.2 \approx 40 \times 20 = 800$. Show the rounded numbers – that is where the marks are.

Sensible rounding: money → nearest penny; people, boxes, coaches → whole numbers (and think about up or down); measurements → the accuracy the question uses.

Section A – Decimal places and significant figures

1. Round 47.3852 to: (a) 1 decimal place (b) 2 decimal places (c) the nearest whole number (d) 2 significant figures (4 marks)

2. Round: (a) 0.03974 to 2 s.f. (b) 619,472 to 1 s.f. (c) 8.0961 to 3 s.f. (d) 2,995 to the nearest ten (4 marks)

3. A bill of £143.87 is shared between three people. How much does each pay, rounded sensibly? What happens to the leftover? (2 marks)

Section B – Estimating

4. Estimate, showing the rounded numbers you use: (a) 41.8×19.6 (b) $792 \div 38.9$ (c) $(5.87 + 14.2) \times 3.1$ (d) 0.48×612 (4 marks)

5. A café sells 187 coffees a day at £2.95. Estimate the takings for a 6-day week. (2 marks)

6. A room is 5.9 m by 4.2 m. Carpet costs £21.50 per square metre. Estimate the cost of carpeting the room, then decide whether £600 is enough. (3 marks)

7. Zoe uses a calculator to work out 28.4×6.9 and gets 1,959.6. Use an estimate to explain why this must be wrong, and say what the likely correct answer is. (2 marks)
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Section C – Sensible rounding in context

8. A recipe for 6 people needs 275 g of rice. Chris cooks for 14 people. Work out how much rice he needs and round to a sensible amount for weighing. (2 marks)
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9. A garden centre needs 850 bulbs. They come in packs of 36. How many packs should it order? Explain your rounding. (2 marks)
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10. A survey reports that 43.6% of 2,150 residents support a new bus route. How many people is that? Round appropriately. (2 marks)
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11. A car does 48.63 miles per gallon. A journey is 312 miles. Fuel costs £6.79 a gallon. Estimate the fuel cost, then calculate it to the nearest penny. How close was your estimate? (4 marks)
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Rounding and Estimating – Answers

Level 2 · Working shown so you can check your method, not just the final number.

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Section A

1. (a) **47.4** (b) **47.39** (c) **47** (d) **47**.
2. (a) **0.040** (b) **600,000** (c) **8.10** (d) **3,000**.
3. $143.87 \div 3 = 47.956\dots \rightarrow$ **£47.96 each** (nearest penny). That totals £143.88, one penny over – in practice one person pays £47.95, or the extra penny is accepted.

Section B

4. (a) $40 \times 20 =$ **800** (b) $800 \div 40 =$ **20** (c) $(6 + 10) \times 3 =$ **48** (d) $0.5 \times 600 =$ **300**.
5. $200 \times £3 \times 6 =$ **£3,600**.
6. $6 \times 4 = 24 \text{ m}^2$. $24 \times £20 =$ **£480**. £600 looks enough – exact cost is $24.78 \times 21.50 = £532.77$, so **yes**.
7. $30 \times 7 = 210$, so the answer must be about 200, not nearly 2,000. Likely she typed 284×6.9 ; the correct answer is **195.96**.

Section C

8. $275 \div 6 \times 14 = 641.67 \text{ g} \rightarrow$ **about 640 g** (or 650 g – any sensible rounding to the nearest 10 g accepted).
9. $850 \div 36 = 23.6 \rightarrow$ **24 packs**. Round up because 23 packs would leave the centre short.
10. $0.436 \times 2,150 = 937.4 \rightarrow$ **937 people** (you cannot have 0.4 of a person).
11. Estimate: $300 \div 50 = 6$ gallons $\times £7 =$ **£42**. Exact: $312 \div 48.63 = 6.416$ gallons $\times 6.79 =$ **£43.56**. The estimate was within £2.

Where Level 2 students lose marks on this topic

- Estimating with exact numbers – the mark is for rounding to 1 s.f. *before* calculating and showing it.
- Rounding too early in a multi-step calculation. Keep full accuracy until the final answer.
- Rounding 0.03974 to 2 s.f. as 0.04 rather than 0.040 – both digits must be shown when asked for 2 s.f.