🖊️ 1. Round values to a specified degree of accuracy

📌 Key Concepts:

- **Rounding to decimal places (dp)**: Focuses on how many digits appear **after** the decimal point.
- **Rounding to significant figures (sf)**: Focuses on the **important digits** in a number, starting from the first **non-zero** digit.

✅ Examples:

a) Round 3.6789 to:

- **2 decimal places (2 dp)** → 3.68
- **3 significant figures (3 sf)** → 3.68

b) Round 0.004567 to:

- **2 dp** → 0.00
- **2 sf** → 0.0046

c) Round 58,921 to:

- **Nearest 10** → 58,920
- **Nearest 1000** → 59,000
- **1 sf** → 60,000

🧮 2. Make estimates for calculations involving numbers, quantities and measurements

📌 Key Concepts:

- Estimation helps simplify calculations by using **rounded values**.
- Used to **check reasonableness** of answers or for **quick mental calculations**.

🔢 Strategies:

- Round numbers to 1 or 2 significant figures.
- Use easy-to-work-with numbers (like 10, 100, etc.).
- Estimate **before** calculating.

✅ Examples:

a) Estimate 19.8×3.92

Round: 20 × 4 = **80**

b) Estimate $\frac{98.2}{4.91}$

Round: $\frac{100}{5} = 20$

c) A bottle holds 1.97 litres. Estimate the volume of 6 such bottles.

Round: 2 L × 6 = **12 litres**

🎯 3. Round answers to a reasonable degree of accuracy in the context of a given problem

📌 Key Concepts:

- The **context** of a problem determines how accurately to round.
- Always consider:
  - **Units** (e.g., money, time, people).
  - The **precision of given data.**
  - Whether overestimating/underestimating is appropriate.

✅ Examples:

a) A car travels 157.62 km in 2.47 hours. Find the speed.

- $\text{Speed} = \frac{157.62}{2.47} \approx 63.83 \text{ km/h}$
- Given the data has **3 sf**, round to **3 sf**:
  Answer: 63.8 km/h

b) A store sold 341 tickets. Each ticket cost $12.75. Estimate the revenue.

- Round 341 → 340
- Round $12.75 → $13
- $340 \times 13 = 4420$
  Estimated Revenue: $4420

📝 Final Tips:

- Use **estimation** to check if your final answer is **reasonable.**
- Be clear whether the question asks for an **exact** answer or an **estimate.**
- Pay attention to the **units** and **context** before rounding your final answer.