

Using a Proportion

- Convert 835 km to metres.

Step 1: Determine a conversion ratio for the two units.

Using the SI Prefix Table, note that $0.001 \text{ km} = 1 \text{ m}$, which can also be written as either $\frac{0.001 \text{ km}}{1 \text{ m}} = 1$ or $\frac{1 \text{ m}}{0.001 \text{ km}} = 1$.

Step 2: Assign a variable for the unknown, and create a second ratio using the information provided.

Let y represent the unknown number of metres.

Then, $y \text{ m} = 835 \text{ km}$ and $\frac{y \text{ m}}{835 \text{ km}} = 1$.

Step 3: Write a proportion with both ratios, and solve for the variable.

$$\begin{aligned} \frac{y \text{ m}}{835 \text{ km}} &= \frac{1 \text{ m}}{0.001 \text{ km}} \\ \frac{y \text{ m}}{\cancel{835 \text{ km}}} \times \cancel{835 \text{ km}} &= \frac{1 \text{ m}}{0.001 \cancel{\text{ km}}} \times 835 \cancel{\text{ km}} \\ y \text{ m} &= 835\,000 \text{ m} \end{aligned}$$

- Use the proportion strategy to complete the following conversion.

$$1253 \text{ cL} = \underline{\hspace{2cm}} \text{ daL}$$

$$\begin{aligned} \frac{y}{1253 \text{ cL}} &= \frac{0.1 \text{ daL}}{100 \text{ cL}} \\ \frac{y}{\cancel{1253 \text{ cL}}} \times \cancel{1253 \text{ cL}} &= \frac{0.1 \text{ daL}}{100 \cancel{\text{ cL}}} \times 1253 \cancel{\text{ cL}} \\ y &= 1.253 \text{ daL} \end{aligned}$$