

Converting Metric Units by Dimensional Analysis

Ex. 1) How many cm in 400 mm?

$$\frac{400 \cancel{\text{mm}}}{1} \cdot \frac{1 \text{ cm}}{10 \cancel{\text{mm}}} = \frac{400}{10} = 40 \text{ cm}$$

Ex. 2) How many mm in 5 km?

$$\frac{5 \cancel{\text{km}}}{1} \cdot \frac{1000 \cancel{\text{m}}}{1 \cancel{\text{km}}} \cdot \frac{1000 \text{ mm}}{1 \cancel{\text{m}}} = \frac{5000000}{1} = 5,000,000 \text{ mm}$$

Ex. 3) How many kL in 2500000 mL?

$$\frac{2500000 \cancel{\text{mL}}}{1} \cdot \frac{1 \cancel{\text{L}}}{1000 \cancel{\text{mL}}} \cdot \frac{1 \text{ kL}}{1000 \cancel{\text{L}}} = \frac{2,500,000}{1000000} = 2.5 \text{ kL}$$