

Referent: a personal reference to estimate SI measurements

ie) width of thumbnail to represent 1 inch

SI System: stands for Système International d'unités

Ex 1) Use a referent to estimate each distance. Then, measure each distance.

a) The thickness of a cellphone

width of fingernail about 1cm, so half of that.  
0.5 cm

b) The height of the seat of a chair

half of a metre 0.5 m. or 50 cm.

c) The width of the cover of this textbook

20cm hand stretched width.

Ex 2) A website reports the following measurements in different stories.

The distance from Earth to the moon is 38 440 300 000 cm.

A worm measures 0.069 m.

a) State a more appropriate SI unit for each measurement. Justify your choice.

38 440 300 000 cm  $\rightarrow$  km. (large)

0.069 m  $\rightarrow$  mm. (small)

b) Convert the given measurement to the more appropriate unit.

$$1\text{m} = 100\text{cm}$$

$$1\text{km} = 1000\text{m}$$

$$1\text{km} = 100 \times 1000\text{cm} \\ = 100\,000\text{cm}$$

$$38\,440\,300\,000\text{cm} \times \frac{1\text{km}}{100\,000\text{cm}} = 384\,403\text{km}$$

$$0.069\text{m} \\ 100\text{cm} = 1\text{m}$$

$$0.069\text{m} \times \frac{1000}{1\text{m}}$$

$$\boxed{6.9\text{cm}}$$

or  
69mm.

Ex 3) Convert each measurement to a more appropriate SI unit. Justify your choice.

- a) The circumference of a highlighter measures 0.06 m.

$$0.06 \text{ m} \times \frac{100 \text{ cm}}{1 \text{ m}} = \underline{6 \text{ cm}}$$

- b) The top of a door is 2032 mm high.

$$2032 \text{ mm} \times \frac{1 \text{ cm}}{10 \text{ mm}} = \boxed{203.2 \text{ cm}} \times \frac{1 \text{ m}}{100 \text{ cm}} = \boxed{2.032 \text{ m}}$$

*1 cm = 10 mm*

Ex 4) Convert the following measurements:

- a) 32 500 mL = 32.5 L

$$32500 \text{ mL} \times \frac{1 \text{ L}}{1000 \text{ mL}} = 32.5 \text{ L}$$

- b) 125 cm = 12.5 dm      1 dm = 10 cm.

$$125 \text{ cm} \times \frac{1 \text{ dm}}{10 \text{ cm}} = 12.5 \text{ dm}$$

- c) 141 mL = 0.141 L

$$141 \text{ mL} \times \frac{1 \text{ L}}{1000 \text{ L}} =$$

- d) 123 m<sup>2</sup> = 1,230,000 cm<sup>2</sup>

$$123 \text{ m}^2 \times \frac{100 \text{ cm}}{1 \text{ m}} \times \frac{100 \text{ cm}}{1 \text{ m}} =$$