

Math 10
May 28th
Conversions.

Solving most conversions is like solving any ratio.

looking for
comparing to

Convert 10 inches to cm

↑
comparing to

↑ looking for

$\frac{\text{cm}}{\text{inches}}$

$$\frac{x}{10} = \frac{2.54 \text{ cm}}{1 \text{ inch}}$$

Get from Conversion Sheet.

$$x = \frac{10(2.54)}{1}$$

$$x = 25.4$$

$$10 \text{ in} = 25.4 \text{ cm}$$

Convert 10 cm into inches
↑ comparing to ↑ Looking for

$\frac{\text{inches}}{\text{cm}}$

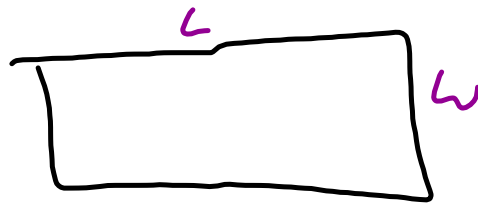
$$\frac{x}{10} = \frac{1}{2.54}$$

From conversions sheet.

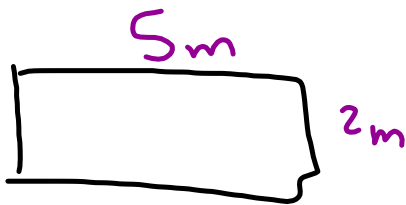
$$x = \frac{10(1)}{2.54} = 3.94$$

Squared units \rightarrow No conversions
on sheet
 \uparrow
Think area

Area of a rectangle $A = L \times w$



$$10 \text{ m}^2 = ? \text{ cm}^2$$

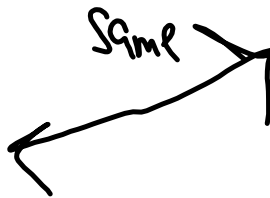


$$10 \text{ m}^2$$

$$\begin{aligned} A &= L \times W \\ &= 5 \times 2 \\ &= 10 \text{ m}^2 \end{aligned}$$



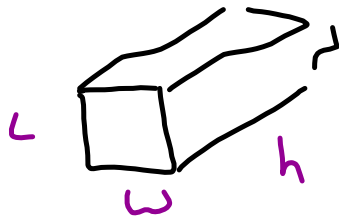
$$\begin{aligned} A &= L \times W \\ &= 500 \times 200 \\ &= 100\,000 \text{ cm}^2 \end{aligned}$$



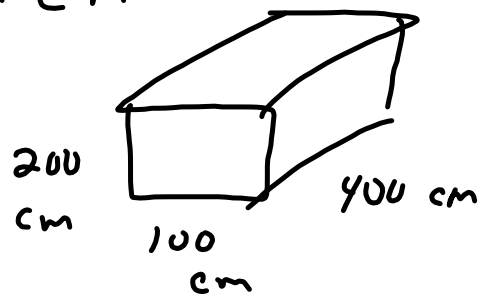
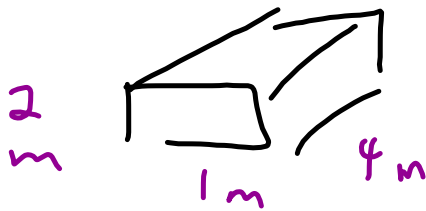
Cubed units \rightarrow Think volume

\rightarrow volume of a box

$$V = L \times W \times h$$



Convert $8 \text{ m}^3 = ? \text{ cm}^3$



$$\begin{aligned} V &= L \times w \times h \\ &= 2 \times 1 \times 4 \\ &= 8 \text{ m}^3 \end{aligned}$$

← Same →

$$\begin{aligned} V &= L \times w \times h \\ &= 200 \times 100 \times 400 \\ &= 8\,000\,000 \text{ cm}^3 \end{aligned}$$

For temperatures, we use formulas

a) Convert 10°C to $^{\circ}\text{F}$

b) Convert 10°F to $^{\circ}\text{C}$

10°C to F

↑ use $F = \frac{9}{5}C + 32$

$$F = \frac{9}{5}(10) + 32$$
$$= 18 + 32$$
$$= 50^\circ F$$

$$10^\circ C = 50^\circ F$$

10 °F to °C



use

$$C = \frac{5}{9} (F - 32)$$

$$= \frac{5}{9} (10 - 32)$$

$$= \frac{5}{9} (-22)$$

$$= -12.2$$

$$10 \text{ °F} = -12.2 \text{ °C}$$