Conversion factors in metric

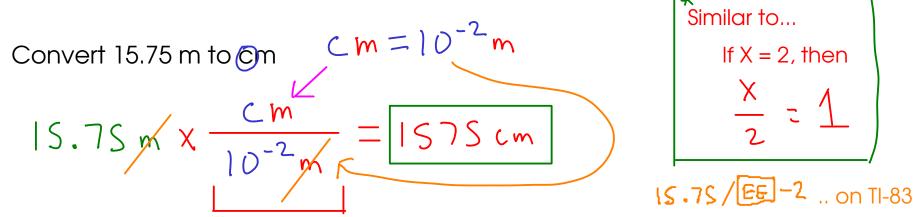
In the metric system, conversion factors between units may always be made from the metric prefixes!

For example, "
$$K_{10}$$
" means 10^{3}
 $K = 10^{3}$

So

 $K_{0} = 10_{0}$
 $K_{0} = 10_{0}$

How do we actually USE a conversion factor?



* This fraction equals one, so multiplying by it does not change the VALUE of the number, only its UNITS!

Convert 0.0183 kg to g
$$Kg = 10^3 g$$

0.0183 kg x $\frac{10^3 g}{Kg} = 18.3 g$

DRAG AND DROP

- Drag the part of the factor that contains the unit you want to get rid of (cancel out) to the BOTTOM.
- Then, drag the other half of the factor to the TOP

Convert 14500 mg to kg
$$mg = 10^{-3}g$$
 $Kg = 10^{3}g$
14500 mg $\chi = \frac{10^{-3}g}{mg} \times \frac{Kg}{10^{3}g} = 0.0145 \text{ Kg}$

Convert 0.147 cm² to m² $(m = 10^{-2} \text{ m})$ $(m = 10^{-2} \text{ m})$ $(m = 1.47 \times 10^{-5} \text{ m})$ $(0.0000147 \text{ m})^2$

When converting squared and cubed units, use each conversion factor two (squared) or three (cubed) times.

$$cm^2 = cm \times cm$$
 $(m^3 = cm \times cm \times cm)$

When writing a factor from

a prefix, remember that you

can't "apply" a base that already

8.45 kg to mg
$$Kg = 10\frac{3}{9} \quad Mg = 10\frac{9}{9}$$
8.45 kg to mg
$$\frac{10\frac{9}{9}}{\frac{109}{9}} \times \frac{Mg}{10\frac{-6}{9}} = \frac{84500000000 \, \text{mg}}{(8.45 \times 10^{9} \, \text{mg})}$$

88100 kHz to MHz
$$\frac{10^{3} \text{Hz}}{\text{MHz}} = 10^{3} \text{Hz}$$
 $\frac{10^{3} \text{Hz}}{\text{KMz}} \times \frac{10^{3} \text{Hz}}{10^{6} \text{Hz}} = \frac{10^{3}$