Conversion factors in metric

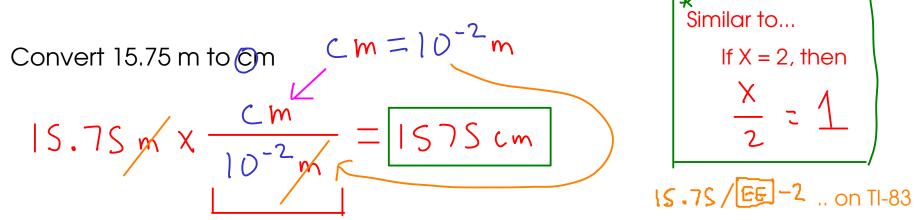
In the metric system, conversion factors between units may always be made from the metric prefixes!

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

So

 $K_{9} = 10_{9}$
 $K_{m} = 10_{m}$
 $K_{s} = 10_{s}$
 $K_{s} = 10_{s}$
 $K_{s} = 10_{s}$
 $K_{s} = 10_{s}$

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 0.01893 kg to g
$$\frac{10^3}{9}$$
 0.01893 kg $\frac{10^9}{18.939}$

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

$$mg = 10^{-3}$$

Convert 14500 mg to kg

14500 m/g x
$$\frac{10^{-3}g}{m/g}$$
 x $\frac{Kg}{10^{3}g}$ - 0,0145 Kg

Convert 0.147 cm² to m²
$$= 10m$$

0.147 c/m² $= 10m$
 $= 10m$

0.147 c/m² $= 1.47 \times 10^{-5} \text{m}^2$

0.0000142 m²

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

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

$$Kg = 10^3 g$$

$$mg = 10^{-6}$$

8.45 kg to ma

HZ = 5" (Frequency)

Convert 38.47 in to m, assuming 2.54 cm = 1 in

2.84 cm = in
$$cm = 10^{-2}m$$

38.47 ix $x = \frac{2.84 \text{ cm}}{\text{ix}} \times \frac{10^{-2}m}{\text{cm}} = \frac{0.9771 \text{ m}}{\text{cm}}$

Convert 12.48 km to in
2.54 cm = in
$$cm = 10m$$
 $km = 10m$
 $12.48 km x \frac{10^3 m}{km} x \frac{cm}{10^{-2} m} x \frac{in}{2.54 cm} = \frac{491300 in}{10^{-2} m}$