

Notes: 9/18/14

# Unit Conversions

Factor:  $\left(\frac{\text{top}}{\text{bottom}}\right) \frac{1}{1}$  top = bottom

$$\left(\frac{1 \text{ ft}}{12 \text{ in}}\right) \left(\frac{2.54 \text{ cm}}{1 \text{ in}}\right) \left(\frac{1 \text{ mi}}{1.61 \text{ km}}\right) \left(\frac{100 \text{ cm}}{1 \text{ m}}\right) \left(\frac{1000 \text{ m}}{1 \text{ km}}\right)$$
$$\left(\frac{5,280 \text{ ft}}{1 \text{ mi}}\right)$$

$$\frac{37 \text{ cm}}{1} \cdot \left(\frac{1 \text{ in}}{2.54 \text{ cm}}\right) = \frac{37}{2.54}$$

$$\boxed{15 \text{ in}}$$

14.566

2 37 cm = ? inches

$$\frac{37,000 \text{ cm}}{1} \left(\frac{1 \text{ m}}{100 \text{ cm}}\right) \left(\frac{1 \text{ km}}{1000 \text{ m}}\right) \left(\frac{1 \text{ mi}}{1.61 \text{ km}}\right) = \underline{0.23 \text{ mi}}$$

37,000 cm =  
? miles

$$\frac{37,000}{161,000} =$$

$$\frac{55 \text{ mi}}{\text{hr}} \left(\frac{1.61 \text{ km}}{1 \text{ mi}}\right) \left(\frac{1000 \text{ m}}{1 \text{ km}}\right) \left(\frac{1 \text{ hr}}{3600 \text{ sec}}\right) = \boxed{25 \frac{\text{m}}{\text{sec}}}$$

55 miles = ? m/sec

$$\frac{88550}{3600} =$$

24.59

$$1.7 \times 10^{10} \mu\text{m} \left( \frac{1 \text{ km}}{10^9 \mu\text{m}} \right) = \frac{1.7 \times 10^1}{10^9} \text{ km}$$

units<sup>2</sup> and unit<sup>3</sup>

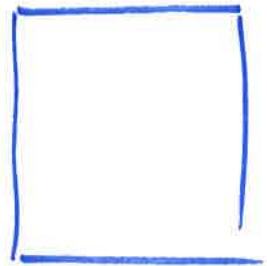
cm · cm

cm<sup>2</sup>

cm

$$54,000 \text{ cm}^2 \left( \frac{1 \text{ m}}{100 \text{ cm}} \right) \left( \frac{1 \text{ m}}{100 \text{ cm}} \right) =$$

$$5.4 \text{ m}^2$$



$$\frac{54,000}{(100 \cdot 100)} =$$

$$54,000 \text{ cm}^3 \left( \frac{1^3 \text{ m}^3}{100^3 \text{ cm}^3} \right) =$$

$$0.054 \text{ m}^3$$

cm<sup>3</sup> = mL

$$\frac{54,000 \cdot 1^3}{100^3} =$$