

Homework Problems: Making Unit Conversions

Make the following conversions:

- 1) Convert 16.7 inches to feet

$$\frac{16.7 \text{ in}}{12 \text{ in}} \left| \frac{1 \text{ ft}}{1} \right. = 1.39 \text{ ft}$$

- 2) Convert 25 yards to feet (there are 3 feet in a yard)

$$\frac{25 \text{ yd}}{1 \text{ yd}} \left| \frac{3 \text{ ft}}{1} \right. = 75 \text{ ft}$$

- 3) Convert 90 centuries to years

$$\frac{90 \text{ cent.}}{1 \text{ cent.}} \left| \frac{100 \text{ yr}}{1} \right. = 9000 \text{ yr}$$

- 4) Convert 84 miles to kilometers (there are 0.6 miles in a kilometer)

$$\frac{84 \text{ mi}}{0.6 \text{ mi}} \left| \frac{1 \text{ km}}{1} \right. = 140 \text{ km} = 100 \text{ km}$$

- 5) Convert 4.75 centimeters to meters

$$\frac{4.75 \text{ cm}}{100 \text{ cm}} \left| \frac{1 \text{ m}}{1} \right. = .0475 \text{ m}$$

- 6) Convert 48,987 minutes to days

$$\frac{48,987 \text{ min}}{60 \text{ min}} \left| \frac{1 \text{ hr}}{1} \right. \left| \frac{1 \text{ day}}{24 \text{ hr}} \right. = 34.019 \text{ day}$$

- 7) Convert 27 months to fortnights (there are 14 days in a fortnight and ~30 days in a month)

$$\frac{27 \text{ mon} \mid 30 \text{ days} \mid 1 \text{ fn}}{1 \text{ mo} \mid 14 \text{ days}} = 58 \text{ f.n.}$$

= 60 fortnight

- 8) Convert 0.09 miles to inches (there are 36 inches in a yard and 1760 yards in a mile)

$$\frac{.09 \text{ mi} \mid 1760 \text{ yd} \mid 36 \text{ in}}{1 \text{ mi} \mid 1 \text{ yd}} = 5702 = 6000 \text{ in}$$

- 9) Convert 4.66 centimeters to miles (there are 0.6 miles in a kilometer)

$$\frac{4.66 \text{ cm} \mid 1 \text{ m} \mid 1 \text{ km} \mid .6 \text{ mi}}{100 \text{ cm} \mid 1000 \text{ m} \mid 1 \text{ km}} = .0000279$$

= $2.79 \times 10^{-5} \text{ mi}$
 $\approx 3 \times 10^{-5} \text{ mi}$

- 10) Convert 556 degrees Celsius to Kelvins

$$556 + 273$$

- 11) Convert 25 Kelvins to degrees Celsius

$$25 \text{ K} - 273$$