8.1 Comparing and Converting Measurements

* Chart p. 760

Conversion factor

a fraction equal to 1 represents the relationship between two different units of measure

$1\text{ ft} = 12\text{ in.}$

$\frac{1\text{ ft.}}{12\text{ in.}}$ $\qquad$ $\frac{12\text{ in.}}{1\text{ ft.}}$

Converting Within the Same Measurement System

Copy and complete the statement.

$27\text{ ft.} = \underline{?}\text{ yd.}$

* What you are converting to, goes on top!

$$27\text{ ft.} \times \frac{1\text{ yd.}}{3\text{ ft.}} = \frac{9}{\cancel{27}\text{ ft.}} \times \frac{1\text{ yd.}}{\cancel{3}\text{ ft.}} = \frac{9\text{ yd}}{1} = 9\text{ yd}$$

$4.5\text{ L} = \underline{?}\text{ mL}$

$$4.5\text{ L} \times \frac{1000\text{ mL}}{1\text{ L}} = \frac{4.5\cancel{\text{L}} \times 1000\text{ mL}}{1\cancel{\text{L}}} = \frac{4500\text{ mL}}{1} = 4{,}500\text{ mL}$$

$18\text{m} = \underline{?}\text{ mm}$

$$18\text{m} \times \frac{1000\text{mm}}{1\text{ m}} = \frac{18\cancel{\text{m}} \times 1000\text{ mm}}{1\cancel{\text{m}}} = 18{,}000\text{ mm}$$

80 oz. = ? lb

$$80\text{ oz.} \times \frac{1\text{ lb}}{16\text{ oz}} = \frac{\overset{5}{\cancel{80}}\text{ oz.} \times 1\text{ lb.}}{\underset{1}{\cancel{16}}\text{ oz.}} = 5\text{ lb.}$$

Converting between Measurement Systems
metric → standard
standard → metric

6 km ≈ ? mi.

$$6\text{ km} \times \frac{1\text{ mi.}}{1.609\text{ km.}} = \frac{6\text{ mi}}{1.609} = 4\text{ mi.}$$

12 fl oz ≈ ? mL

$$12\text{ fl oz} \times \frac{29.573\text{ mL}}{1\text{ fl oz.}} = 355\text{ mL}$$

32 in = ? cm.

$$32\text{ in} \times \frac{2.54\text{ cm}}{1\text{ in}} = 81.3\text{ cm}$$

HW p440 #4, 6, 8, 10
#14, 16, 18, 20