

## Practicing Unit Conversions

For each question below, be sure to show your work and calculations.

### 1. Mass Conversions

- a. If someone weighs 200 pounds, what is their weight in kg?

$$\frac{\text{kg}}{\text{lb}} = \frac{\text{kg}}{\text{lb}} \Rightarrow \frac{0.454}{1} = \frac{x}{200}$$

$$x = 200 \times 0.454$$

$$x = 90.8 \text{ kg}$$

- b. If someone weighs 75 kg, what is their weight in pounds?

$$\frac{\text{lb}}{\text{kg}} = \frac{\text{lb}}{\text{kg}} \Rightarrow \frac{x}{75} = \frac{1}{0.454}$$

$$x = \frac{75}{0.454}$$

$$x = 165 \text{ lbs}$$

$$x = 165 \text{ lbs}$$

### 2. Distance Conversions

- a. The distance from Gravenhurst to Toronto is 200 km. How many miles is the drive?

$$\frac{\text{miles}}{\text{km}} = \frac{\text{miles}}{\text{km}} \Rightarrow \frac{x}{200} = \frac{1}{1.6}$$

$$x = \frac{200}{1.6}$$

$$x = 125 \text{ miles}$$

- b. Your gym teacher says you are doing a 5 mile run today, how many metres are you running?

$$\frac{\text{km}}{\text{miles}} = \frac{\text{km}}{\text{miles}} \Rightarrow \frac{x}{5} = \frac{1.6}{1}$$

$$x = 5 \times 1.6$$

$$x = 8 \text{ km}$$

$$\therefore \text{it is } 8,000 \text{ m } (8 \text{ km} \times 1000)$$

go to km first

3. Volume Conversions

a. Once upon a time milk was sold in gallons. If you went through a half gallon jug of milk, how many litres of milk did you consume?

$$\frac{L}{G} = \frac{L}{G} \Rightarrow \frac{0.5 \times 3.78}{1} = \frac{x}{0.5} \times 0.5$$

$$x = 1.89 L$$

b. These days you can buy milk in bags totalling 4 L. How many gallons of milk is this?

$$\frac{Gal}{L} = \frac{Gal}{L} \Rightarrow \frac{4 \times 1}{3.78} = \frac{x}{4} \times 4$$

$$x = 1.06 \text{ gallons}$$

4. Height Conversions

a. I am 5'11" (5 feet, 11 inches) tall. What is my height in cm?

convert to inches

12 inches in a foot...

$$5 \text{ft} = 12 \times 5 = 60 \text{ inches}$$

$$5'11" \Rightarrow 60 + 11 \Rightarrow 71 \text{ inches}$$

$$\frac{cm}{in} = \frac{cm}{in}$$

$$71 \times \frac{2.54}{1} = \frac{x}{71} \times 71$$

$$x = 180.34 \text{ cm}$$

b. Andrew Wiggins is 2.03 m tall. What is his height in feet and inches?

$$2.03 \text{ m} \Rightarrow 203 \text{ cm}$$

$$\frac{in}{cm} = \frac{in}{cm}$$

$$203 \times 1 = \frac{x}{2.54} \times 2.54$$

$$x = 80 \text{ inches}$$

$$6 \text{ft } 8 \text{ inches}$$

$$12 \times 6 = 72$$

$$72 \text{ in}$$

$$6'$$

we had 8" left over