

Unit Conversions Practice

- There are 5280 feet in one mile
- There are 0.034 ounces in one milliliter
- There are 0.454 kg in one pound
- There are 1.6 kilometers in one mile
- There are 73 gallons in 2 barrels
- There are 1.05 quarts in one liter
- There are 4 quarts in one gallon

Do the following one-step unit conversions:

- 1) Convert 120 lbs to kilograms.

$$\frac{120 \text{ lb} \mid .454 \text{ kg}}{1 \text{ lb}} = 54.48 \text{ kg} \approx 54 \text{ kg}$$

- 2) Convert 451 mL to ounces.

$$\frac{451 \text{ mL} \mid .034 \text{ oz}}{1 \text{ mL}} = 15.334 \text{ oz} \approx 15.3 \text{ kg}$$

- 3) Convert 4 quarts to liters.

$$\frac{4 \text{ Qt} \mid 1 \text{ L}}{1.05 \text{ Qt}} = 3.809 = 3.8 \text{ L}$$

- 4) Convert 0.045 barrels to gallons.

$$\frac{.045 \text{ barrels} \mid 73 \text{ G}}{2 \text{ barrel}} = 1.6425 \text{ G} \approx 1.6 \text{ G}$$

Do the following multi-step unit conversions:

- 5) Convert 65 ounces to liters. (There are 1000 mL in one liter).

$$\frac{65 \text{ oz} \mid 1 \text{ mL} \mid 1 \text{ L}}{.034 \text{ oz} \mid 1000 \text{ mL}} = 1.9117 \text{ L} \approx 1.9 \text{ L}$$

- 6) Convert 12 liters to barrels.

$$\frac{12 \text{ L} \mid 1.05 \text{ Qt} \mid 1 \text{ G} \mid 2 \text{ barrels}}{1 \text{ L} \mid 4 \text{ Qt} \mid 73 \text{ G}} = .086 \text{ barrels}$$

Do the following word problems using dimensional analysis.

1. A child requires a 5 ml dose of medicine each day. How many days would a gallon of this medicine last?

$$\frac{1 \text{ G} | 4 \text{ Qt} | 1 \text{ L} | 1000 \text{ mL} | 1 \text{ day}}{1 \text{ G} | 1.05 \text{ Qt} | 1 \text{ L} | 5 \text{ mL}} = 761.9 \approx 761 \text{ days}$$

2. The moon is 384,403 km from the earth. Estimate how many quarters laid end to end it would take to reach the moon if a quarter has a diameter of 2.3 cm.

$$\frac{384403 \text{ km} | 1000 \text{ m} | 100 \text{ cm}}{1 \text{ km} | 1 \text{ m} | 2.3 \text{ cm}} \text{ quarters} = 1.67 \times 10^{10}$$

3. A clerk can sort 375 sheets per hour. If there are 225 sheets in an inch, how long will it take her to file 125 inches of loose sheets?

$$\frac{125 \text{ in.} | 225 \text{ sheets} | 1 \text{ hour}}{1 \text{ in} | 375 \text{ sheets}} \text{ hours} = 75 \text{ hours}$$

16,713,200,000 quarters

4. Recycling one metric ton of corrugated cardboard will save about 17 trees. A warehouse recycled 14,327 kilograms of corrugated cardboard over the last year. How many trees did this save?

(1 metric ton = 1,000 kilograms)

A. 14

B. 143

C. 244

D. 2420

$$\frac{14327 \text{ kg} | 1 \text{ metric ton} | 17 \text{ trees}}{1000 \text{ kg} | 1 \text{ metric ton}} = 243.559$$

5. Twenty-four 750 milliliter bottles are shipping out of the warehouse. In total, how many liters were shipped?

A. 18

B. 24

C. 75

D. 180

$$\frac{24 \text{ bottles} | 750 \text{ mL} | 1 \text{ L}}{1 \text{ bottle} | 1000 \text{ mL}} = 18$$