

Pre-Algebra
 Converting Between
 Systems of Measurement

Goal: to convert between the metric and US customary units

Some of our common conversions:

1 in. = 2.54 cm 1 ft = 0.3048 m 1 mi = 1.609 km

1 fl oz = 29.573 mL 1 qt = 0.946 L

1 gal = 3.785 L 1 oz = 28.35 g 1 lb = 0.454 kg (pg. 69)

Convert:

28 kg = ___lb

$2.2 \text{ lb} = 1 \text{ kg}$

$$\frac{28 \cancel{\text{kg}}}{1 \cancel{\text{kg}}} \times 2.2 \text{ lb} \approx 61.6 \text{ lbs}$$

$$\frac{28 \cancel{\text{kg}}}{.454 \cancel{\text{kg}}} \times 1 \text{ lb} = \frac{28}{.454} \approx 61.6 \text{ lbs}$$

Convert:
 8 mi into km

$$\frac{8 \cancel{\text{mi}}}{1 \cancel{\text{mi}}} \times 1.61 \text{ km} \approx 12.88 \text{ km}$$

16 kg into lbs $1 \text{ kg} = 2.2046 \text{ lbs}$

$$\frac{16 \cancel{\text{kg}}}{1 \cancel{\text{kg}}} \times 2.2046 \text{ lbs} = 35.3 \text{ lbs}$$

You can use conversions to compare measurements.

Which is larger:
 70 cm or 29 in

$27.3 \text{ in} < 29 \text{ in}$

$$\frac{70 \cancel{\text{cm}}}{1 \cancel{\text{cm}}} \times .39 \text{ in} = 27.3 \text{ in}$$

Sometimes you have to use multiple conversion factors.

$$1 \text{ gal} \approx 3.785 \text{ L}$$

5 gal = _____ mL

$$1000 \text{ mL} = 1 \text{ L}$$

$$\begin{array}{r|l|l} 5 \text{ gal} & 3.785 \text{ L} & 1000 \text{ mL} \\ \hline & 1 \text{ gal} & 1 \text{ L} \\ \hline & & 18,925 \text{ mL} \end{array}$$

Scientists have observed manatees weighing as much as 454 kilograms. What is this weight in lbs?

$$\frac{454 \text{ Kg}}{\quad}$$

Hwk: pg 70

#2 - 14 evens, 20,

24 - 32 evens