U1D1-T Metric and Imperial Conversions

Wednesday, January 24, 2018 3:51 PM

U1D1-T
Metric an...

U1D1 **MAP 4CI Metric and Imperial Conversions**

Note: To convert multiply by an appropriate ratio so the old units divide out.

$$\text{value in old units} \times \frac{\text{conversion in new units}}{\text{conversion in old units}}$$

1) Convert each measure

a) 8 feet to inches

$$8\text{ ft} \times \frac{12\text{ in}}{1\text{ ft}}$$

$= 96$ inches

b) 5400 m to km

$$5400\text{ m} \times \frac{1\text{ km}}{1000\text{ m}}$$

$= 5.4$ km

c) 124 inches to yards

$$124\text{ inches} \times \frac{1\text{ ft}}{12\text{ in.}} \times \frac{1\text{ yd}}{3\text{ ft}}$$

$= 124 \div 12 \div 3$

$\doteq 3.4$ yd

2) Converting Imperial to metric

a) 5 gallons to Litres * use UK gallons

$$5\,\cancel{gal} \times \frac{4.54\ L}{1\ \cancel{gal}}$$

$= 22.7\ L$

b) 8.9 km to miles

$$8.9\,km \times \frac{1\ mi}{1.609\ km}$$

$\doteq 5.5$ miles

c) 25 mL to fluid ounces

$$25\,mL \times \frac{1\ fl\,oz}{28.413\ mL}$$

0.879

$\doteq 0.88$ fl.oz.

d) 3 in to mm

$$3\text{in} \times \frac{1\text{ ft}}{12\text{ in}} \times \frac{304.8\text{ mm}}{1\text{ ft}}$$

$= 3 \div 12 \times 304.8$

$= 76.2$ mm

e) 15 ounces to kg

$$15\text{ oz} \times \frac{28.35\text{ g}}{1\text{ oz}} \times \frac{1\text{ kg}}{1000\text{ g}}$$

$= 15 \times 28.35 \div 1000$

$= 0.43$ kg

f) 4 kg to pounds and ounces

$$4\text{ kg} \times \frac{1000\text{ g}}{1\text{ kg}} \times \frac{1\text{ lbs}}{453.6\text{ g}}$$

$= 8.816$ pounds

8 lbs

0.816 lbs = ____ oz

$$0.816\text{ lbs} \times \frac{16\text{ oz}}{1\text{ lbs}}$$

$= 13$ oz.

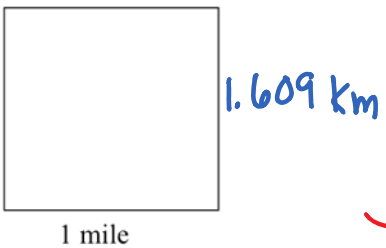
$\therefore$ 4 kg = 8 lbs, 13 oz.

3) Converting Areas

"It is not the same as converting distances. Here is a different method you can use to convert areas in different units of measurement if you already know the appropriate conversions for lengths.:

3a) Convert 16 miles^2 to km^2.

Consider 1 mile^2. Convert the side lengths to km first – then calculate the area using these new measures.



$1\,mi \times \frac{1.609\ km}{1\ mi} = 1.609\,km$

$16\,mi^2 \times \frac{(1.609\ km)^2}{(1\ mi)^2}$

$= 16\,mi^2 \times \frac{1.609^2\ km^2}{1\ mi^2}$

$= 2.59\,km^2$

3b) Convert 5500 cm^3 to Litres

$1\,mL = 1\,cm^3$

$5500\,mL \times \frac{1\ L}{1000\ mL}$

$= 5.5\,L$

3c) Convert 10 ft^2 to m^2

$$10\,ft^2 \times \frac{304.8^2\,mm^2}{1\,ft^2} \times \frac{1\,m^2}{1000^2\,mm^2}$$

$= 10 \times 304.8^2 \div 1000^2$

$= 0.92903\ldots$

$\doteq 0.93\,m^2$

3d) Convert 0.29m^3 to ft^3

$$0.29\,m^3 \times \frac{1000^3\,mm^3}{1\,m^3} \times \frac{1\,ft^3}{304.8^3\,mm^3}$$

$= 0.29 \times 1000^3 \div 304.8^3$

$= 10.241\ldots$

$\doteq 10.24\,ft^3$

U1DI HW: Pg. 4 # 3 – 7 ✓ Pg 537