

**NOTES: Converting between Metric and Imperial Measurements**

Date: Feb. 13

**Common length conversions**

Imperial	Imperial and Metric	Metric
1 foot = 12 inches	1 inch = 2.54 cm	1 cm = 10 mm
1 yard = 3 feet	1 foot = 30.48 cm	1 m = 100 cm
1 yard = 36 inches	1 yard = 0.9144 m	1 m = 1000 mm
1 mile = 1760 yards	1 mile ≈ 1.609 km	1 km = 1000 m
1 mile = 5280 feet		

≈ approximately.

Set up a proportion to convert between units. You may need more than one step!

a)  $5'10'' = \underline{\hspace{2cm}}$  cm

change to inches  
 $= (5 \times 12) + 10$   
 $= 70 \text{ in}$

$\frac{1 \text{ in}}{2.54 \text{ cm}} = \frac{70 \text{ in}}{x}$   
 $x = \boxed{177.8 \text{ cm}}$

Round to the nearest hundredth (2 decimal places).

b)  $9\frac{1}{2}$  feet =            cm

9.5 ft

$\frac{1 \text{ ft}}{30.48 \text{ cm}} = \frac{9.5 \text{ ft}}{x}$   
 $x = \boxed{289.56 \text{ cm}}$

c) 1500 m =            yards

$\frac{1 \text{ yd}}{0.9144 \text{ m}} = \frac{x}{1500 \text{ m}}$   
 $x = 1640.4199\dots$   
 $= \boxed{1640.42 \text{ yd}}$

d) 3.5 km = \_\_\_\_\_ miles

$$\frac{1 \text{ mi}}{1.609 \text{ km}} = \frac{x}{3.5 \text{ km}}$$
$$x = 2.17526 \dots$$
$$= \boxed{2.18 \text{ mi}}$$

e) 1500 mm = \_\_\_\_\_ feet

mm  $\rightarrow$  cm  
cm  $\rightarrow$  ft.

$$\frac{1 \text{ cm}}{10 \text{ mm}} = \frac{x}{1500 \text{ mm}}$$
$$x = 150 \text{ cm}$$
$$\frac{1 \text{ ft}}{30.48 \text{ cm}} = \frac{x}{150 \text{ cm}}$$
$$x = 4.9212 \dots$$
$$= \boxed{4.92 \text{ ft}}$$

f) 125 inches = \_\_\_\_\_ m

in  $\rightarrow$  cm  
cm  $\rightarrow$  m

$$\frac{1 \text{ in}}{2.54 \text{ cm}} = \frac{125 \text{ in}}{x}$$
$$x = 317.5 \text{ cm}$$
$$\frac{1 \text{ m}}{100 \text{ cm}} = \frac{x}{317.5 \text{ cm}}$$
$$x = 3.175$$
$$= \boxed{3.18 \text{ m}}$$

g) 2.6 km = \_\_\_\_\_ yards

km  $\rightarrow$  m  
m  $\rightarrow$  yd.

$$\frac{1 \text{ km}}{1000 \text{ m}} = \frac{2.6 \text{ km}}{x}$$
$$x = 2600 \text{ m}$$
$$\frac{1 \text{ yd}}{0.9144 \text{ m}} = \frac{x}{2600 \text{ m}}$$
$$x = 2843.3945 \dots$$
$$= \boxed{2843.39 \text{ yd}}$$