

NOTES: Converting between SI and Imperial Measurements

Name: _____

Date: Sept. 27

Common length conversions

Imperial	Imperial and SI	SI
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 \approx 1.609 km	1 km = 1000 m
1 mile = 5280 feet		

Metric

\approx about

Converting between Imperial and SI length units

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

a) $5'10'' =$ _____ cm

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

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

$$x = \boxed{177.8 \text{ cm}}$$

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

9.5 feet

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

$$x = \boxed{289.56 \text{ cm}}$$

c) 1500 m = _____ yards

$$\frac{1 \text{ yard}}{0.9144 \text{ m}} = \frac{x}{1500 \text{ m}}$$

$$x = \boxed{1640.42 \text{ yd}}$$

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

$$\frac{1 \text{ cm}}{10 \text{ mm}} = \frac{x}{1500 \text{ mm}} \quad x = 150 \text{ cm}$$
$$\frac{1 \text{ ft}}{30.48 \text{ cm}} = \frac{x}{150 \text{ cm}} \quad x = 4.92125\dots$$
$$= \boxed{4.92 \text{ ft}}$$

f) 125 inches = _____ m

in \rightarrow cm
cm \rightarrow m

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

g) 2.6 km = _____ yards

km \rightarrow m
m \rightarrow yd

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