

# Imperial Measurements

February 2, 2017 4:14 PM

Imperial Measurements came into being in 1824. They were a standardized version of the Winchester standard units of the 15th century.

## Lengths

Inch (in or ")	12 inches = 1 foot
Feet (ft. or ')	3 feet = 1 yard
Yard (yd)	1760 yards = 1 mile
Mile (mi)	5280 ft = 1 mi

**Examples:** Do the following conversions

8ft to inches

$$8 \cancel{\text{ft}} \times \frac{12 \text{ in}}{1 \cancel{\text{ft}}} = 96 \text{ in}$$

$$12 \text{ in} = 1 \text{ ft} = \underline{\underline{96 \text{ in}}}$$

62 yd to miles

$$1760 \text{ yd} = 1 \text{ mi} \quad 62 \text{ yd} \times \frac{1 \text{ mi}}{1760 \text{ yd}} = \underline{\underline{0.035 \text{ mi}}}$$

234 yd to feet

$$3 \text{ ft} = 1 \text{ yd} \quad 234 \text{ yd} \times \frac{3 \text{ ft}}{1 \cancel{\text{yd}}} = 702 \text{ ft}$$

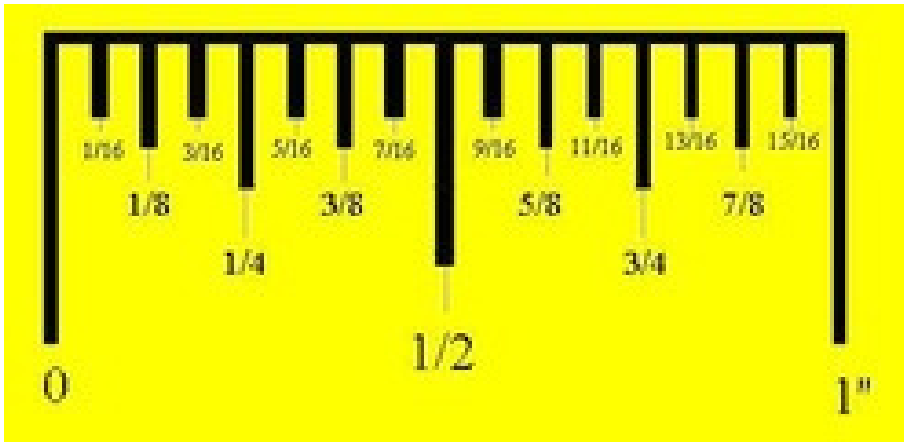
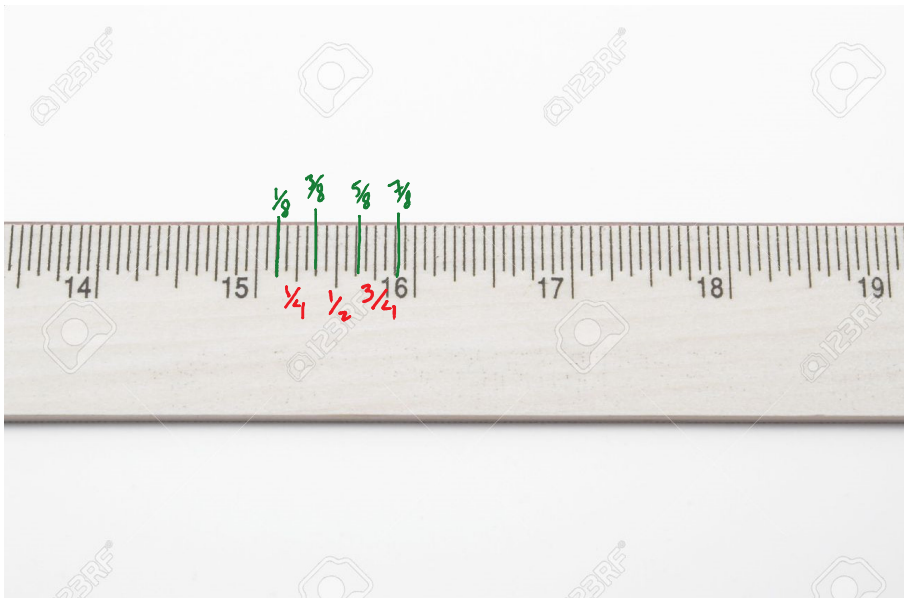
5.5 feet to inches

$$12 \text{ in} = 1 \text{ ft} \quad 5.5 \cancel{\text{ft}} \times \frac{12 \text{ in}}{1 \cancel{\text{ft}}} = \underline{\underline{66 \text{ in}}}$$

3.5 yards to inches

$$3 \text{ ft} = 1 \text{ yd} \quad 12 \text{ in} = 1 \text{ ft} \quad 3.5 \cancel{\text{yd}} \times \frac{3 \cancel{\text{ft}}}{1 \cancel{\text{yd}}} \times \frac{12 \text{ in}}{1 \cancel{\text{ft}}} = 3.5 \times 3 \times 12 \text{ in} = \underline{\underline{126 \text{ in}}}$$

Using imperial Units on a Ruler



## Referents

Inch: width of your thumb

Foot: Approximate out how many of your feet equal 1 imperial foot

1 large foot  
1 Buckingham Size  
feet

You try:

Estimate the width of your text book using your thumb.

Estimate the length of your desk using your feet.

~ 9 in

~ 5 ft

## Examples

Mr. Horncastles Westy, has wheels that have a diameter of 2.083 ft.

a) What is the radius of these wheels in inches

$$\begin{aligned} d &= 2r \\ \frac{2.083 \text{ ft}}{2} &= \frac{2r}{2} \\ 1.0415 \text{ ft} &= r \end{aligned}$$

$$12 \text{ in} = 1 \text{ ft}$$

$$1.0415 \text{ ft} \times \frac{12 \text{ in}}{1 \text{ ft}} = \underline{\underline{12.5 \text{ in}}}$$

b) What is the circumference in Yards?

$$1.0415 \text{ ft} \times \frac{1 \text{ yd}}{3 \text{ ft}} = \underline{\underline{0.347 \text{ yd}}}$$

HW: Ch 1.2 pg 29

b) What is the circumference in Yards?

$$1.0415 \text{ ft} = r$$

$$C = 2\pi r \quad 2r = d = 2.083 \text{ ft}$$

$$= \pi(2r) \quad 1 \text{ yd} = 3 \text{ ft}$$

$$= \pi(2.083 \text{ ft})$$

$$C = 6.54 \text{ ft}$$

$$6.54 \text{ ft} \times \frac{1 \text{ yd}}{3 \text{ ft}}$$

$$= \underline{\underline{2.18 \text{ yd}}}$$

c) How many times will the wheel fully rotate in 1 mile of driving?

$$1 \text{ mi} = 1760 \text{ yd}$$

$$\frac{1760 \text{ yd}}{2.18 \text{ yd}} = \underline{\underline{807 \text{ full rotations}}}$$

HW: Ch 1.2 pg 29  
1-15 odd