

International System of Units (SI)



Système Internationale d'Unités

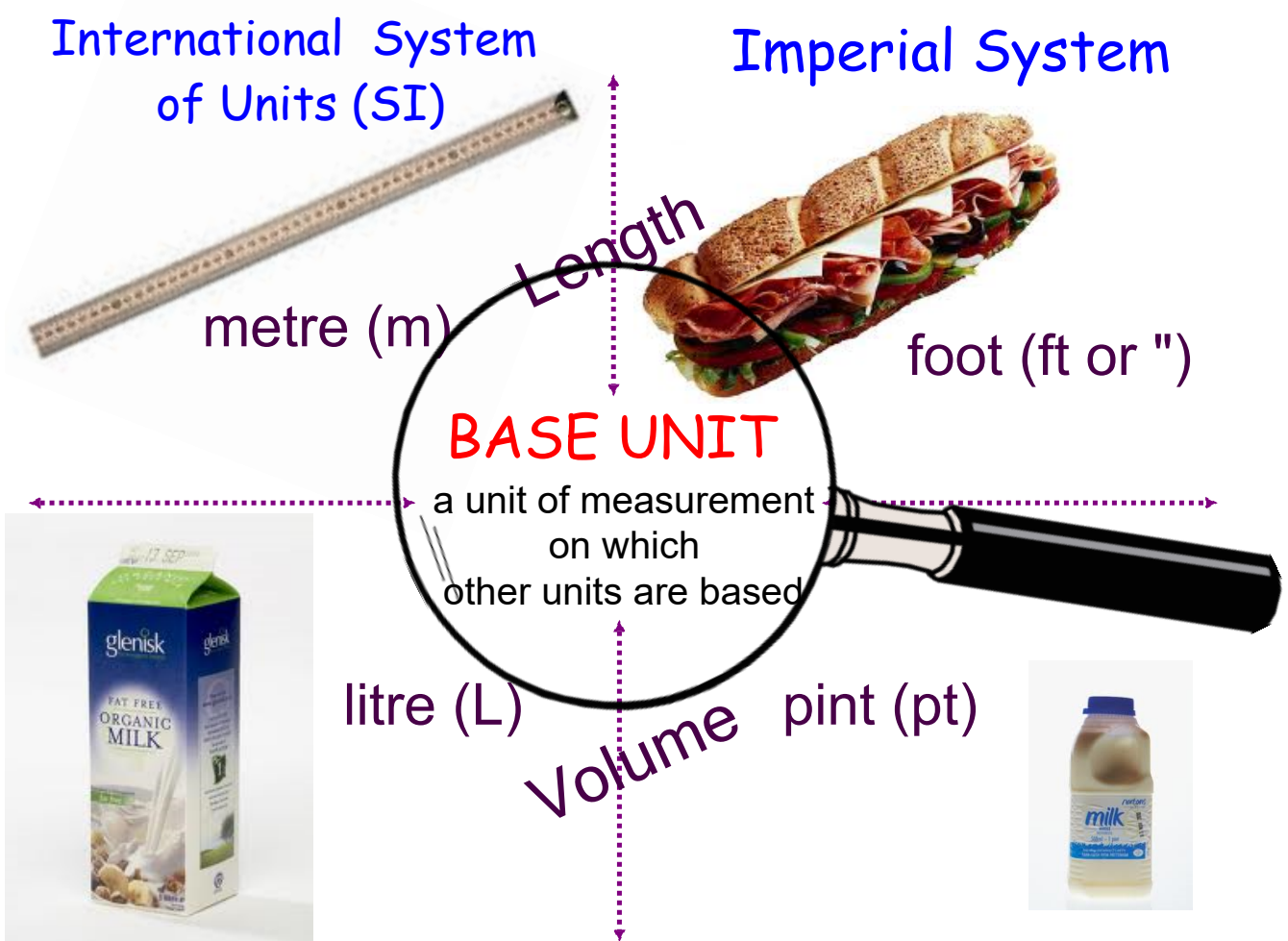
"metric"



Imperial System

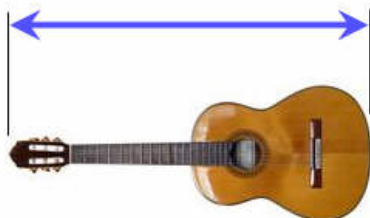
"standard"





Meter (Metre in UK)

The length of this guitar is about **1 meter**:





Kilogram



This gold bar has a mass of **1 kilogram**.

The Imperial system is **NOT** a decimal system

Each group of units
has a particular relationship.

Some Common Imperial Units	
Length	
<i>Unit</i>	<i>Abbreviation</i>
inch	in or " 
foot	ft or ' 
yard	yd
mile	mi

Each group of units
has a particular relationship.

inch

foot

yard

mile

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

$$3 \text{ feet} = 1 \text{ yard}$$

$$1760 \text{ yards} = 1 \text{ mile}$$

Imperial CONVERSIONS

Conversion Factor

$$\text{Number} \times \frac{\text{want}}{\text{have}}$$

Imperial CONVERSIONS

Convert 240" to feet

$$\begin{aligned}\text{Conversion Factor} &= \frac{\text{units you want}}{\text{units you have}} \\ &= \frac{\text{feet}}{\text{inches}} \\ &= \frac{1}{12}\end{aligned}$$

Number x Conversion Factor

$$\begin{aligned}240 &\times 1/12 \\ &= 240/12 \\ &= 20\end{aligned}$$



You try:

Perform the following conversions:



a) 36 inches to feet

b) 10 yards to feet

c) 5000 yards to miles

Perform the following conversions:

a) 36 inches to feet



Conversion Factor

want
have

feet

inches

$\frac{1}{12}$

$$36 \times \frac{1}{12}$$

$$\frac{36}{12}$$

3'

b) 10 yards to feet



Conversion Factor

want
have
feet
yards
3
1

$$10 \times \frac{3}{1}$$

30'

c) 5000 yards to miles



Conversion Factor

want
have
miles
yards
1
1760

$$5000 \times \frac{1}{1760}$$

$$\frac{5000}{1760}$$

2.84 mi

Can you see the difference?



"Four and one half inches."



$$4\frac{1}{2}''$$

$$4'\frac{1}{2}''$$

"Four FEET and one half inches."



Convert $4\frac{1}{2}$ " to inches

$$4 \times \frac{\text{Want}}{\text{Have}}$$

$$4 \times \frac{\text{Inches}}{\text{Feet}}$$

$$4 \times \frac{12}{1}$$
$$= 48$$

$$48 + .5$$

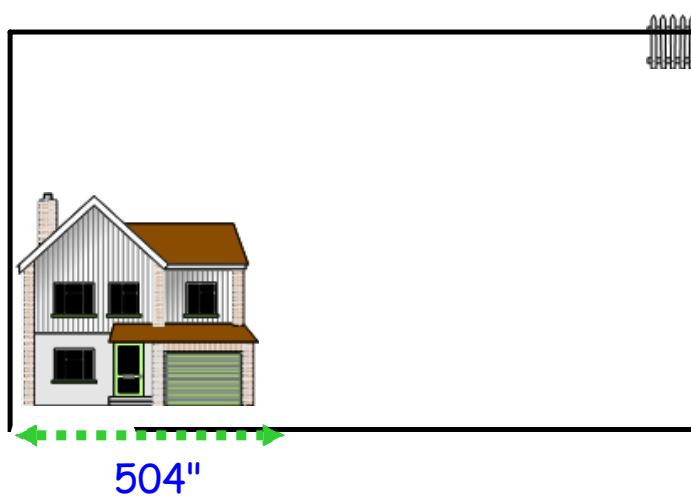
$$= 48.5 \text{ inches}$$

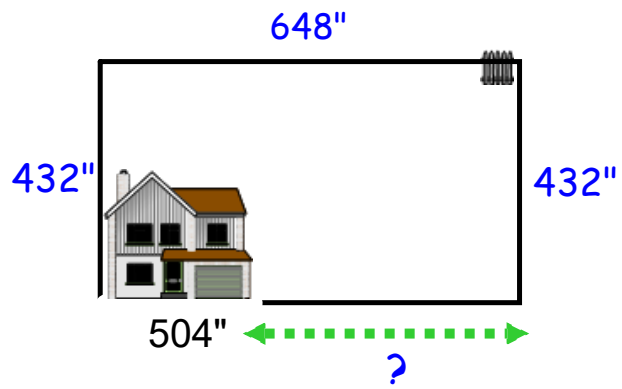
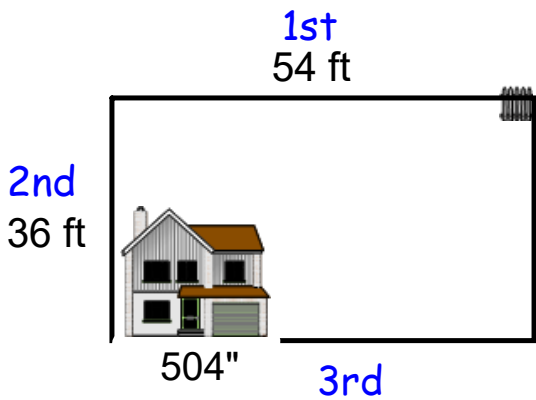


Homework
Finish Worksheet

Kiri needs to replace the wooden fence that surrounds her yard. She measured her property, and it is 54 feet wide and 36 feet deep. There is no fence in front of her house, and the gap in the fence at the front of the property is 504 inches, as shown in the diagram.

Label the diagram below in inches.

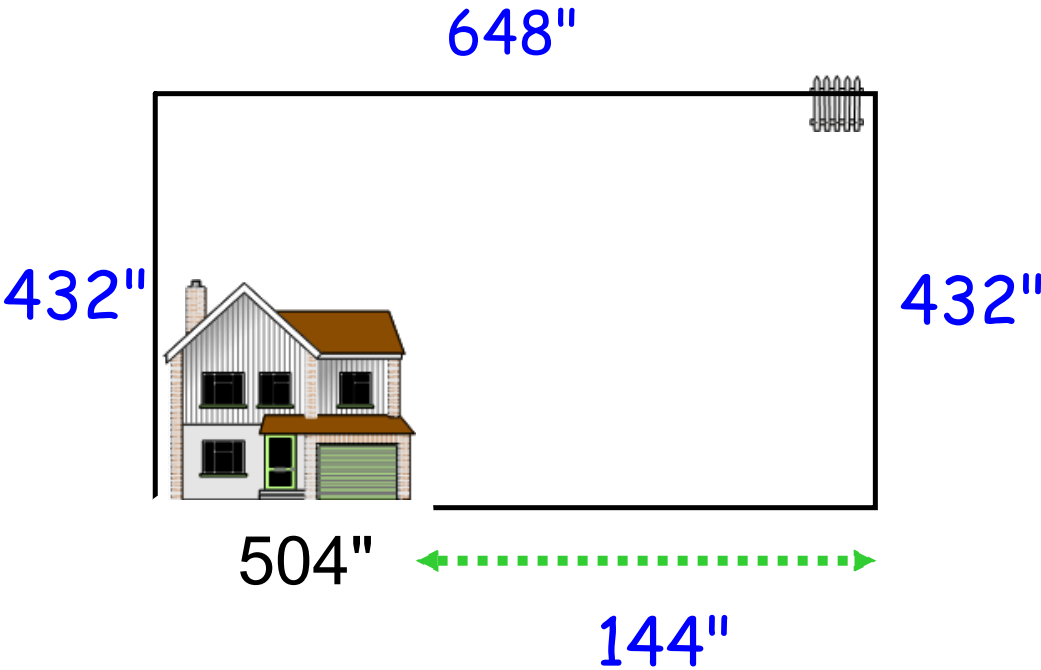




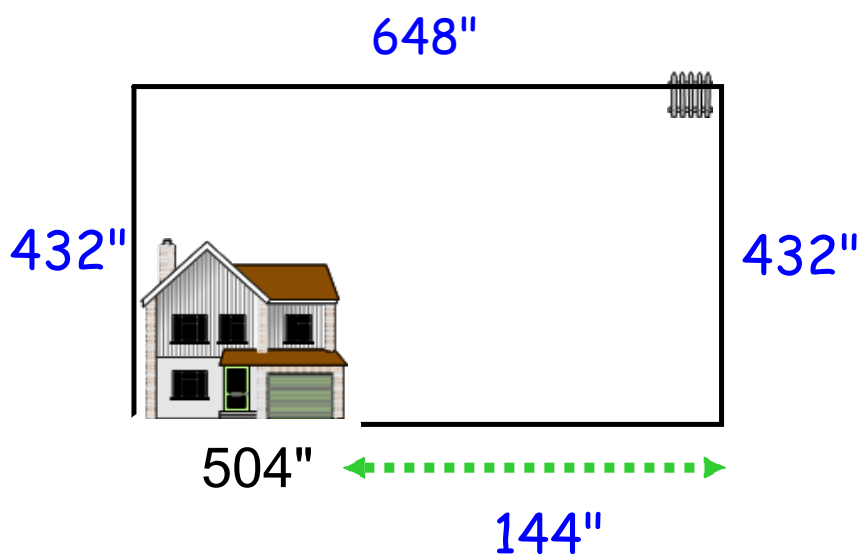
$$\begin{aligned}
 & \text{1st} \\
 & \text{Number x } \frac{\text{inches}}{\text{feet}} \\
 & = 54 \text{ x } \frac{12}{1} \\
 & = \frac{648}{1} \\
 & = 648 \text{ inches}
 \end{aligned}$$

$$\begin{aligned}
 & \text{2nd} \\
 & \text{Number x } \frac{\text{inches}}{\text{feet}} \\
 & = 36 \text{ x } \frac{12}{1} \\
 & = \frac{432}{1} \\
 & = 432 \text{ inches}
 \end{aligned}$$

$$\begin{aligned}
 & \text{3rd} \\
 & 648 - 504 = 144"
 \end{aligned}$$

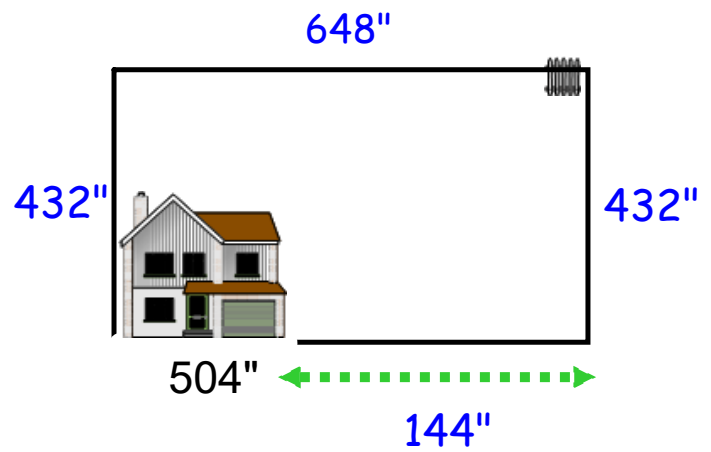


Determine the distance required to fence.

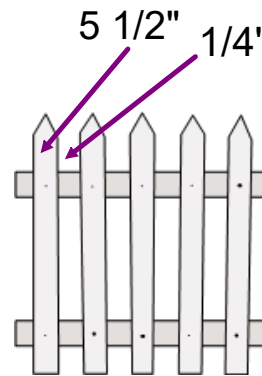
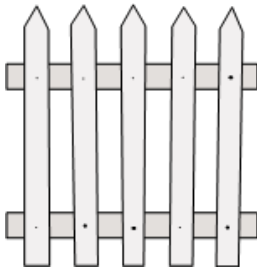


$$432'' + 648'' + 432'' + 144'' = 1656''$$

Kiri plans to replace the existing fence pickets with 5-foot-long cedar boards placed vertically. The boards are $5\frac{1}{2}$ inches wide and will be spaced $\frac{1}{4}$ inch apart.

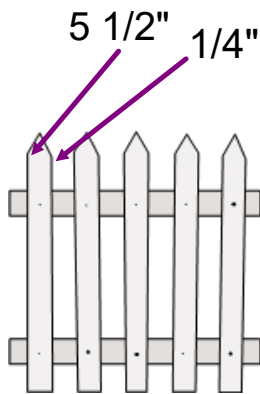


Label the fence below.



Kiri plans to replace the existing fence pickets with 5-foot-long cedar boards placed vertically. The boards are $5 \frac{1}{2}$ inches wide and will be spaced $\frac{1}{4}$ inch apart.

How many cedar boards are required?



$$\begin{aligned} \text{Board + Space} &= 5 \frac{1}{2}'' + \frac{1}{4}'' \\ &= 5 \frac{3}{4}'' \\ &= 5.75'' \end{aligned}$$

$$\frac{1656}{5.75} = 288 \text{ Boards}$$

$$\begin{aligned} &\frac{1}{2} + \frac{1}{4} \\ &= \frac{2}{4} + \frac{1}{4} \\ &= \frac{3}{4} \end{aligned}$$

How Many Pints in a Gallon?



1 Gallon



4 Quarts



8 Pints



16 Cups

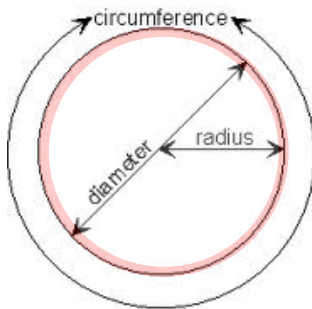
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Questions 1 to 6
as well as #8

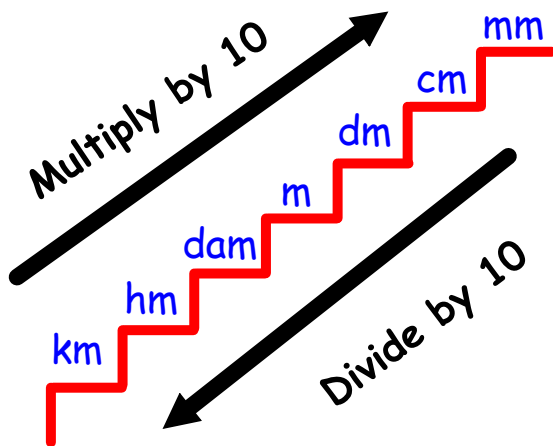
Hang on there...
other than perimeter
you will need to remember
another formula
to complete the assigned questions.



$$C = \pi d$$

$$C = 2\pi r$$

The SI is a decimal system based on multiples of 10



- a) 130 cm = _____ m
- b) _____ g = 150 mg
- c) 60 L = _____ ml
- d) 3.25 km = _____ cm
- e) _____ g = 0.68 kg

km hm dam m dm cm mm

kl hl dal L dl cl ml

kg hg dag g dg cg mg