

The Imperial System

try these examples

i. $\frac{1}{2} \times 10 = 5$

ii. $\frac{1}{4} \times 24 = 6$

iii. $\frac{1}{2} \times 1760 = 880$

iv. $\frac{3}{4} \times 5280 = 3960$

What is the Imperial system?

- the Imperial System of measurement evolved from a system used in Ancient Rome based on referents from the human body and everyday activities.

Referent:
a known measure used for
comparing and estimating

- for example
 - one inch- the width of a person's thumb
 - 1 foot - the distant from a person's heel to the big toe and
 - 1 yard - the length of a person's stride

What is the Imperial System?

- often the unit for based on an important person, like a king this resulted in units that were different in different regions
- In 1824, the units were standardized and became the imperial system of measurement

Write the four units of imperial measurement below in order from largest unit to smallest unit

Unit	Relationships
inch (in. or “)	
foot (ft or ’)	12 inches = 1 foot
yard (yd)	3 feet = 1 yard
mile (mi)	1760 yards = 1 mile

Page 38 numbers 3 and 4

2. how many inches are in 1 yard?

- 1 yard = 3 ft and 1 foot = 12 in.
- $3 \text{ ft/yd} \times 12 \text{ in./feet} = 36 \text{ inches in a yard}$

3. how many feet are in 1 mile?

- 1 mi = 1760 yd and 1 yd = 3 ft
- $3 \text{ ft/yd} \times 1760 \text{ yd/mi} = 5280 \text{ feet in 1 mile}$

Example 1:

- Colin is 5' 11" tall. How tall is Colin in inches?

- Solution:

A. How many inches is there in 5 ft

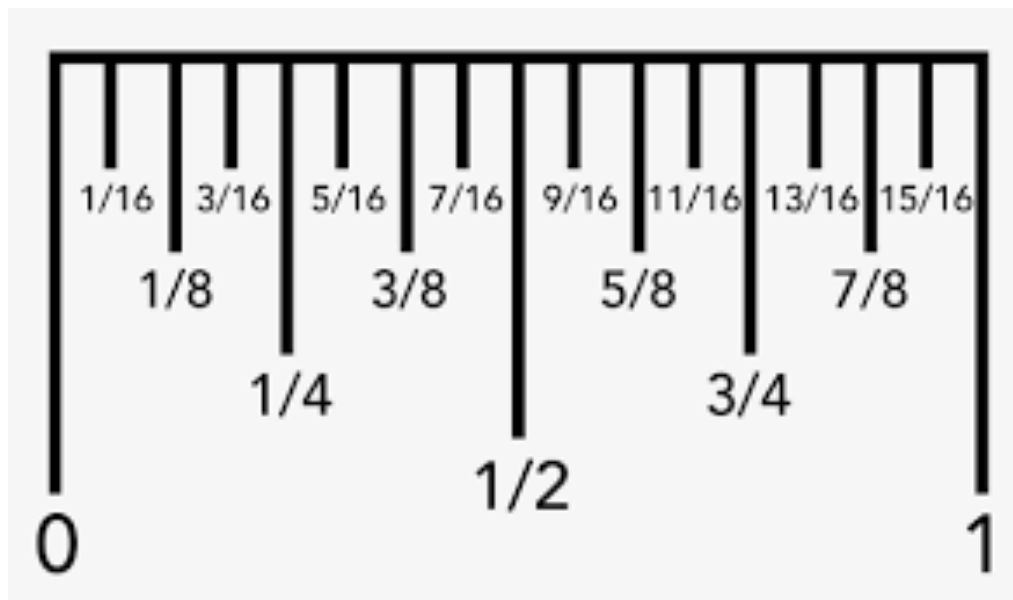
- 1 ft = 12 in., so in 5 ft there are
- $5 \text{ ft} \times 12 \text{ in./ft} = 60 \text{ in.}$

B. What is Colin's height in inches?

- $60 \text{ in.} + 11 \text{ in.} = 77 \text{ in.}$

How are inches broken into smaller divisions?

- An inch is divided into 16 parts
- This means working with fractions



Example 2:

- Sandy is building a staircase with eight steps each step is $7\frac{1}{4}$ inches high. What is the height of this staircase in feet and inches?
- Solution:
 - A. Consider the whole numbers first. $7 \text{ in.} \times 8 = 56 \text{ in.}$
 - B. Consider the fraction next. $\frac{1}{4} \text{ in.} \times 8 = 2 \text{ in.}$
 - C. What is the total height? $56 \text{ in.} + 2 \text{ in.} = 58 \text{ in.}$
 - D. what is the height in feet and inches?
 - $58 \text{ in.} \div 12 = 4 \text{ remainder } 10$
 - So, the height of the staircase is 4 ft 10 in.

Reflecting: Sandy's Job requires her to use imperial measures. What other jobs do you know that use imperial measures?

Practice

1) 5 ft 3 in. = _____ in.

2) 40 yd = _____ ft

3) 12 ft = _____ yd

4) $\frac{1}{4}$ foot = _____ in.

5) $\frac{1}{2}$ mile = _____ yd.

6) If Julia is 5' 6" how tall is she in inches?

7) The height of a ramp is 40" how tall is that in feet and inches?

8) Cameron is building a fence around his yard. The fence panels are 6 feet wide the yard is 40 ft. How many pieces does he need to build his fence?

- Assignment: Page 40 to 41 # 1-3, 5, 7, 8 and 10