

Conversion method:

$$\text{unit given} \times \frac{\text{conversion factor of unit wanted}}{\text{conversion factor of given unit}}$$

Example: Convert 3.5 feet into inches

* Definition of unit conversion: $1\text{ft} = 12\text{in}$

$$3.5\text{ft} \times \frac{12\text{in}}{1\text{ft}} = 42\text{in}$$

*The *ft* in the given cancels with the *ft* in the denominator of the conversion factor.

Metric System

Measurement	Base Units Metric System
Length/Distance	Meters (m)
Mass	Grams (g)
Volume	Liters (L)
Time	Second (s)

Unit Conversion (Metric Shortcut)

Factor	Prefix	Symbol
$10^9 = 1\ 000\ 000\ 000$	giga-	G
$10^6 = 1\ 000\ 000$	mega-	M
$10^3 = 1000$	kilo-	k
$10^2 = 100$	hector-	h
$10^1 = 10$	deka-	da
$10^0 = 1$		
$10^{-1} = \frac{1}{10}$	deci-	d
$10^{-2} = \frac{1}{100}$	cent-	c
$10^{-3} = \frac{1}{1000}$	milli-	m
$10^{-6} = \frac{1}{1\ 000\ 000}$	micro-	μ
$10^{-9} = \frac{1}{1\ 000\ 000\ 000}$	nano-	n

Imperial System

Measurement	Possible Units Imperial System
Length	Inches (in), Feet (ft), Yard (yd), Mile (mi)
Mass	Ounce (oz), Pound (lb), Stone, Tonne, Slug
Volume	Fluid Ounce (fl. Oz), Cup, Pint (pt), Gallon (gal)
Time	Second (s), Minute (min), Hour (h), Day (d)

Significant Digits

Addition and Subtraction:

Rule: The minimum number of sig. digits after the decimal in question

=The number of sig. digits after the decimal in your answer

Examples:

a) $3.2 + 4.83 = 8.03 \approx 8.0$

b) $0.3081 + 1.200 = 1.5084 \approx 1.508$

c) $601 - 3.4 = 597.6 \approx 598$

d) $0.0065 + 1.06 = 1.0665 \approx 1.07$

Multiplication and Division:

The minimum number of sig. **digits in entire number** in question

=The number of sig. digits in entire number of your answer

Examples:

a) $3.2 \times 4.83 = 15.456 \approx 15$

b) $0.3084 \times 1.200 = 0.37008 \approx 0.3701$

c) $601 \div 3.4 = 175.7647 \approx 180$

d) $0.0065 \div 1.06 = 0.00613 \approx 0.006$