

Fundamental or Base Quantities

The quantities which do not depend upon other quantities for their complete definition are known as **fundamental** or **base quantities**.
e.g.: length, mass, time, etc.

Derived Quantities

The quantities which can be expressed in terms of the fundamental quantities are known as **derived quantities**.
e.g.: Speed = distance/time, Volume = length*breadth

Units of Physical Quantities

The chosen reference standard of measurement in multiples of which, a physical quantity is expressed is called the **unit** of the quantity.
e.g.: Physical Quantity = Numerical Value x Unit

Length Conversion

Metric to American

2.54cm 1in

American

12 inches (in) 1 foot (ft)

3 feet (ft) 1 yard (yd)

220 yards (yd) 1 furlong (fur)

8 furlongs (fur) 1 mile

1 mile 1760 yd, 5280 ft, 63360 in

Mass Conversion

Metric to American

1kg 2.2046lbs

1g 0.0353oz

American

1oz 16dr

1lb 16oz

1cwt 100lbs

1ton 20cwt, 2000lbs

1tonne 1000kg

SI Base Units

| Base Unit | Unit | Symbol |
|---------------------|----------|--------|
| Length | Meter | m |
| Mass | Kilogram | kg |
| Time | Second | s |
| Temperature | Kelvin | k |
| Electric Current | Ampere | A |
| Intensity of Light | Candela | cd |
| Amount of Substance | Mole | mol |

Prefixes for Different Powers of 10

| Power of 10 | Prefix | Symbol | Power of 10 | Prefix | Symbol |
|-------------|--------|--------|-------------|--------|--------|
| 10^{18} | exa | E | 10^{-1} | deci | d |
| 10^{15} | peta | P | 10^{-2} | centi | c |
| 10^{12} | tera | T | 10^{-3} | milli | m |
| 10^9 | giga | G | 10^{-6} | micro | m |
| 10^6 | mega | M | 10^{-9} | nano | n |
| 10^3 | kilo | k | 10^{-12} | pico | p |
| 10^2 | hecto | h | 10^{-15} | femto | f |
| 10^1 | deca | da | 10^{-18} | atto | a |

Dimensional Formula

The relation which expresses physical quantities in terms of appropriate powers of fundamental quantities.

Use of Dimensional Analysis

To check the dimensional correctness of a given physical relation.

To derive relationship between different physical quantities.

To convert units of a physical quantity from one system to another.



By [jianandre1011](#)

Not published yet.

Last updated 11th September, 2022.

Page 1 of 1.

Sponsored by [Readable.com](#)

Measure your website readability!

<https://readable.com>