DIMENSIONAL ANALYSIS

Name	Dimension	SI Unit	Symbol
*length	l	meter	m
*time	t	second	s
*mass	m	gram	g
weight	$m^1l^1t^{-2}$	newton	N
velocity	l^1t^{-1}	m/s	m/s
acceleration	l^1t^{-2}	m/s^2	m/s^2
force	$m^1l^1t^{-2}$	newton	N
work & energy	$m^1l^2t^{-2}$	joule	J
power	$m^1l^2t^{-3}$	erg/s	erg/s
pressure	$m^1l^{-1}t^{-2}$	pascal	Pa
volume	l^3	cubic meter	m^3
density	ml^{-3}	kg/m^3	ρ
electric charge	At	coulomb	C
*temperature	T	Kelvin	K
*amount of substance	mol	mole	mol
*electric current	A	ampere	A
*luminosity	cd	candela	cd

** Indicates SI base units – all others are derived.*

NUMERICAL PREFIXES

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

Geometry

Area of a circle:	πr^2
Circumference of a circle:	$2\pi r$
Surface area of a sphere:	$4\pi r^2$
Volume of a sphere:	$^4/_3\pi r^3$

UNIT CONVERSIONS

Linear Measure
1 inch = 25.40 millimeters
1 mile = 1.609 kilometers
1 mile = 5280 feet

Square Measure
1 square mile = 640 acres = 259 hectares
1 acre = 4840 square yards = 0.405 hectare

Capacity Measure - Liquid
1 quart = 2 pints = 0.946 liters

Mass
1 pound = 16 ounces = 0.4536 kilogram
1 ounce = 28.35 grams

Temperature
°F = 9C/5+32
°C = 5(F-32)/9
K = C+273.15

Energy
1 BTU = 778.3ft•lb = 252 cal = 1055 joule
1 joule = 4.184 calories

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