

Lengths – Conversions						
Abbreviations						
Å: Angstrom	ft: foot	yd: yard				
in: inch	ly: lightyear	pc: parsec				
Conversion units						
1 km = 10^3 m	1 dm = 10^{-1} m	1 cm = 10^{-2} m	1 mm = 10^{-3} m	1 μ m = 10^{-6} m		
1 nm = 10^{-9} m	1 Å = 10^{-10} m	1 pm = 10^{-12} m	1 fm = 10^{-15} m			
	[m]	[cm]	[in]	[ft]	[yd]	[mile]
1 m	1	100	39.3701	3.280 84	1.093 61	$6.213 71 \cdot 10^{-4}$
1 cm	10^{-2}	1	0.393 701	0.032 808	0.010 936	$6.2137 \cdot 10^{-6}$
1 in	$2.54 \cdot 10^{-2}$	2.54	1	1/12	1/36	$1.5783 \cdot 10^{-5}$
1 ft	0.3048	30.48	12	1	1/3	$1.893 94 \cdot 10^{-4}$
1 yd	0.9144	91.44	36	3	1	$5.681 82 \cdot 10^{-4}$
1 mile	1609.34	160 934	63 360	5280	1760	1
1 mile = 1.609 34 km						
1 ly = $9.4607 \cdot 10^{15}$ m						
1 pc = $3.0857 \cdot 10^{16}$ m						

Area – Conversions					
Abbreviations					
a: are	ha: hectare	ft: feet	in: inch	yd: yard	
Conversion units					
1 a (are) = 10 m • 10 m = 100 m ²					
1 ha (hectare) = 100 a = 100 m • 100 m = 10 ⁴ m ² = 10 ⁻² km ²					
	[m ²]	[in ²]	[ft ²]	[yd ²]	[mile ²]
1 m ²	1	1550.003	10.763 910	1.195 990	3.861 • 10 ⁻⁷
1 in ²	6.4516 • 10 ⁻⁴	1	9/1296	1/1296	2.491 • 10 ⁻¹⁰
1 ft ²	9.290 304 • 10 ⁻²	1296/9	1	1/9	3.857 • 10 ⁻⁸
1 yd ²	8.361 2736 • 10 ⁻¹	1296	9	1	3.2283 • 10 ⁻⁷
1 mile ²	2.589 988 110 336 • 10 ⁶	4.014 • 10 ⁹	2.788 • 10 ⁷	3.098 • 10 ⁶	1
1 acre = 4840 yd ² = 43 560 ft ² = 32 Khata = 4.047 m ²					
1 barn = 10 ⁻²⁸ m ²					
1 tetrad = 2 km • 2 km					
1 hectad = 10 km • 10 km					
1 myriad = 100 km • 100 km					
1 Bigha = 20 Khata = 400 Dhur = 8000 Dhurki					
1 yd ² = 2.066 1157 • 10 ⁻⁴ acres = 3.228 305 79 • 10 ⁻⁷ miles ² = 0.0000 8.361 2736 • 10 ⁻⁷ hectares					

Volume – Conversions							
Abbreviations							
am.:	american	brit.:	british	liq.:	liquid	oz.:	ounce
Conversion units							
1 l = 10 ⁻³ m ³ = 1 dm ³ = 10 ³ cm ³ = 10 ⁶ mm ³		1 ml = 1 cm ³ ;		1 ul = 10 ⁻⁶ l;		1 nl = 10 ⁻⁹ l;	
	[l]	[gallon] (US)	[pint] (UK)	[1 am. liq oz.]	[1 brit. liq oz.]	[m ³]	
1 l	1	0.264 172	2.113 38	33.814	0.879 877	10 ⁻³	
1 gallon (US)	3.785 41	1	6.661 39	128	133.228	3.785 41 • 10 ⁻³	
1 pint (UK)	0.568 261	0.150 119	1	19.2152	20	0.568 261	
1 am. liq. oz.	2.957 35 • 10 ⁻²	7.8125 • 10 ⁻³	5.204 21 • 10 ⁻²	1	1.040 84	2.9574 • 10 ⁻⁵	
1 brit. liq. oz.	2.841 131 • 10 ⁻²	7.505 94 • 10 ⁻³	5 • 10 ⁻²	0.96076	1	2.8413 • 10 ⁻⁵	
1 m ³	10 ³	0.264 172	1.759 75	33.814	35.1951	1	
1 gallon (US)	= 3.785 411 784 l	= 3.785 411 784 • 10 ⁻³ m ³					
1 pint (UK)	= 0.568 261 25 l	= 0.568 261 285 249 35 • 10 ⁻³ m ³					
1 American liquid ounce	= 0.029 573 529 6875 l						
1 British liquid ounce	= 0.028 413 062 5 l						

Speed – Conversions		
1 Knot (kn)	= 1.852 km/h	= 0.5144 m/s
1 m/s	= 3.6 km/h	

Mass				
	[g]	[pound]	[ounce]	[stone]
1 g (gram)	1	$2.204\ 62 \cdot 10^{-3}$	$3.5274 \cdot 10^{-2}$	$1.574\ 73 \cdot 10^{-4}$
1 pound	453.592	1	16	$7.142\ 86 \cdot 10^{-2}$
1 ounce	28.3495	$6.25 \cdot 10^{-2}$	1	$4.464\ 29 \cdot 10^{-3}$
1 stone	6350.29	14	224	1
1 pound	= 0.453 592 37 kg	= 453.592 37 g		
1 ct (carat)	= $2 \cdot 10^{-4}$ kg	= 200 mg		

Energy – Conversions					
	[J]	[cal]	[Wh]	[eV]	[Ha]
1 J	1	0.239 006	$2.777\ 78 \cdot 10^{-4}$	$6.242 \cdot 10^{18}$	$4.359\ 744\ 650 \cdot 10^{-18}$
1 cal	4.184	1	$1.162\ 22 \cdot 10^{-3}$	$2.611 \cdot 10^{19}$	$9.597 \cdot 10^{17}$
1 Wh	3600	0.860 421	1	$2.247 \cdot 10^{22}$	$8.257 \cdot 10^{20}$
1 eV	$1.6022 \cdot 10^{19}$	$3.8293 \cdot 10^{-20}$	$4.4505 \cdot 10^{-23}$	1	$3.674\ 93 \cdot 10^{-2}$
1 Ha	$4.359\ 744\ 650 \cdot 10^{-18}$	$1.042 \cdot 10^{-18}$	$1.211 \cdot 10^{-21}$	27.2114	1
1 cal	= 4.1868 J				
1 kWh	= $3.6 \cdot 10^6$ J				
1 eV	= $1.602\ 176\ 487 \cdot 10^{-19}$ J				

Energy – Conversions for physical chemistry								
	[J]	[kJ/mol]	[kcal/mol]	[Ha]	[eV]	[cm ⁻¹]	[Hz]	[K]
1 J	1	6.022 140 857 • 10 ²³	1.439 • 10 ²⁴	2.293 712 317 • 10 ¹⁷	6.241 509 126 • 10 ¹⁸	5.034 116 651 • 10 ²²	1.509 190 205 • 10 ³³	7.242 973 100 • 10 ²²
1 kJ/mol	1.660 539 040 • 10 ⁻²⁴	1	2.390 • 10 ⁻¹	3.808 798 848 • 10 ⁻⁴	1.036 426 958 • 10 ⁻²	8.359 347 233 • 10 ¹	2.506 069 254 • 10 ¹²	1.202 723 949 • 10 ²
1 kcal/mol	6.948 • 10 ⁻²⁵	4.184	1	1.594 • 10 ⁻³	4.336 • 10 ⁻²	3.498 • 10 ²	1.049 • 10 ¹³	5.032 • 10 ²
1 Ha	4.359 744 650 • 10 ⁻¹⁸	2.625 499 639 • 10 ³	6.275 • 10 ²	1	2.7211386020 • 10 ¹	2.194 746 314 • 10 ⁵	6.579 683 921 • 10 ¹⁵	3.157 751 300 • 10 ⁵
1 eV	1.602 176 621 • 10 ⁻¹⁹	9.648 533 288 • 10 ¹	2.306 • 10 ¹	3.674 932 248 • 10 ⁻²	1	8.065 544 005 • 10 ³	2.417 989 262 • 10 ¹⁴	1.160 452 210 • 10 ⁴
1 cm ⁻¹	1.986 445 824 • 10 ⁻²³	1.196 265 656 • 10 ⁻²	2.859 • 10 ⁻³	4.556 335 253 • 10 ⁻⁶	1.2398419739 • 10 ⁻⁴	1	2.997 924 580 • 10 ⁶	1.438 777 360 • 10 ⁻⁴
1 Hz	6.626 070 040 • 10 ⁻³⁴	3.990 312 711 • 10 ⁻¹³	9.537 • 10 ⁻¹⁴	1.519 829 846 • 10 ⁻¹⁶	4.1356676629 • 10 ⁻¹⁵	3.335 640 952 • 10 ⁻⁷	1	4.799 244 700 • 10 ⁻¹¹
1 K	1.380 648 520 • 10 ⁻²³	8.314 459 861 • 10 ⁻³	1.987 • 10 ⁻³	3.166 810 509 • 10 ⁻⁶	8.6173303078 • 10 ⁻⁵	6.950 345 674 • 10 ³	2.083 661 206 • 10 ¹⁰	1

Power		
1 PS	= 75 kp • m/s	= 735.498 75 W

Pressure		
1 bar	= 10^5 Pa	= 10^5 N/m ²
1 atm	= 101 325 Pa	= 1.013 25 bar
1 Torr	= 1/760 atm = 1.333 mbar = 1 mm Hg	

Temperature		
Transform from:		
°C to K	$T_{Kelvin} = (T_{Celsius} + 273.15 \text{ } ^\circ\text{C}) \cdot \frac{\text{K}}{^\circ\text{C}}$	
K to °C	$T_{Celsius} = (T_{Kelvin} - 273.15 \text{ K}) \cdot \frac{^\circ\text{C}}{\text{K}}$	
°C to °F	$T_{Fahrenheit} = \left(T_{Celsius} \cdot \frac{9 \text{ } ^\circ\text{F}}{5 \text{ } ^\circ\text{C}}\right) + 32 \text{ } ^\circ\text{C}$	
°F to °C	$T_{Celsius} = (T_{Fahrenheit} - 32 \text{ } ^\circ\text{F}) \cdot \frac{5 \text{ } ^\circ\text{C}}{9 \text{ } ^\circ\text{F}}$	

Angles		
2π rad	= 360°	= 6400 mil
200 gon	= 180°	= π rad

Dosimetry	
1 R (Röntgen)	= $2.58 \cdot 10^{-4}$ C/kg
1rd (Rad)	= 0.01 Gy
1 Ci (Curie)	= $3.7 \cdot 10^{10}$ Bq
1 rem	= 0.01 Sv (Sievert)

Luminance	
1 stilb	= 1 cd/cm ²

Magnetic field	
1 M (Maxwell)	= 10^{-8} V•s
1 Oe (Oersted)	= $\frac{250}{\pi} \cdot \frac{A}{m}$
1 G (Gauss)	= 10^{-4} T

Roman numbers							
I	1	XI	13	LXX	70	DCCC	800
II	2	XIV	14	LXXX	80	CM	900
III	3	XV	15	XC	90	CMX	910
IV	4	XVI	16	C	100	M	1000
V	5	XVII	17	CII	102	MDLV	1555
VI	6	XVIII	18	CC	200	MM	2000
VII	7	XIX	19	CCC	300	\overline{V}	5000
VIII	8	XX	20	CD	400	\overline{X}	10000
IX	9	XXX	30	D	500	\overline{L}	50000
X	10	XL	40	DL	550	\overline{C}	100000
XI	11	L	50	DC	600	\overline{D}	500000
XII	12	LX	60	DCC	700	\overline{M}	1000000

Data Sizes				
1 bit holds either the value 0 or 1				
1 Byte (B) = 8 bits				
Unit	corresponds to	in bytes (B)	in bytes (B)	in bits
1 Kilobyte (KB)	1'024 bytes	2^{10}	1'024	$8 \cdot 2^{10}$
1 Megabyte (MB)	1'024 kilobytes	2^{20}	1'048'576	$8 \cdot 2^{20}$
1 Gigabyte (GB)	1'024 megabytes	2^{30}	1'073'741'824	$8 \cdot 2^{30}$
1 Terrabyte (TB)	1'024 gigabytes	2^{40}	1'099'511'627'776	$8 \cdot 2^{40}$
1 Petabyte (PB)	1'024 terrabytes	2^{50}	1'125'899'906'842'624	$8 \cdot 2^{50}$
1 Exabyte (EB)	1'024 petabytes	2^{60}	1'152'921'504'606'846'976	$8 \cdot 2^{60}$
1 Zettabyte (ZB)	1'024 exabytes	2^{70}	1'180'591'620'717'411'303'424	$8 \cdot 2^{70}$
1 Yottabyte (YB)	1'024 zettabytes	2^{80}	1'208'925'819'614'629'174'706'176	$8 \cdot 2^{80}$