Periodic Table of the Elements

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1	Hydrogen [1.00784, 1.00811]																	Helium 4.002602
2	Lithium [6.938, 6.997]	Beryllium 9.0121831											${\bf B}_{{\rm Boron}\atop{[10.806,\ 10.821]}}^{5}$	Carbon [12.0096, 12.0116]	7 N Nitrogen [14.00643, 14.00728]	8 Oxygen [15.99903, 15.99977]	9 F Fluorine 18.998403162	$\overset{10}{\mathrm{Ne}}_{\overset{\mathrm{Neon}}{20.1797}}$
3	Na Sodium 22.98976928	Mg Magnesium [24.304, 24.307]											13 Al Aluminium 26.9815385	Silicon [28.084, 28.086]	Phosphorus 30.973761998	16 S Sulfur [32.059, 32.076]	Chlorine [35.446, 35.457]	18 Ar Argon [39.792, 39.963]
4	K Potassium 39.0983	Ca Calcium 40.078	21 Sc Scandium 44.955907	Ti Titanium 47.867	Vanadium 50.9415	Cr Chromium 51.9961	25 Mn Manganese 54.938043	Fe Iron 55.845	27 Co Cobalt 58.933194	28 Ni Nickel 58.6934	29 Cu Copper 63.546	30 Zn Zinc 65.38	Gallium 69.723	Germanium 72.630	33 As Arsenic 74.921595	Se Selenium 78.971	35 Br Bromine [79.901, 79.907]	36 Kr Krypton 83.798
5	37 Rb Rubidium 85.4678	Strontium 87.62	39 Y Yttrium 88.905838	Zr Zirconium 91.224	11 Nb Niobium 92.90637	Mo Molybdenum 95.95	Tc Technetium (99)	Ruthenium 101.07	45 Rh Rhodium 102.90549	Palladium 106.42	47 Ag Silver 107.8682	48 Cd Cadmium 112.414	49 In Indium 114.818	$\overset{50}{\mathbf{Sn}}_{\overset{\mathrm{Tin}}{118.710}}$	Sb Antimony 121.760	Te Tellurium 127.60	53 I Iodine 126.90447	54 Xe Xenon 131.293
6	55 CS Caesium 132.90545196	Ba Barium 137.327	51-71 * Lanthanides	72 Hf Hafnium 178.486	73 Ta Tantalum 180.94788	74 W Tungsten 183.84	75 Re Rhenium 186.207	76 Os Osmium 190.23	77 Ir Iridium 192.217	78 Pt Platinum 195.084	79 Au Gold 196.966570	80 Hg Mercury 200.592	T1 Thallium [204.382, 204.385]	$\overset{82}{\mathbf{Pb}}_{\overset{\mathrm{Lead}}{[206.14,\ 207.94]}}$	83 Bi Bismuth 208.98040	Polonium (210)	At Astatine (210)	86 Rn Radon (222)
7	Francium (223)	$\overset{88}{ ext{Ra}}_{\overset{ ext{Radium}}{ ext{(226)}}}$	89–103 ** Actinides	Rutherfordium (267)	Db Dubnium (268)	Seaborgium (271)	Bh Bohrium (272)	108 Hs Hassium (277)	Meitnerium (276)	Ds Darmstadtium (281)	\mathbf{Rg}^{111} $\mathbf{Rg}^{Roentgenium}$ (280)	Cn Copernicium (285)	Nh Nihonium (278)	Flerovium (289)	Mc Moscovium (289)	Lv Lv Livermorium (293)	$\overset{117}{\mathbf{Ts}}$ Tennessine (293)	Oganesson (294)

	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71
*	La	\mathbf{Ce}	\mathbf{Pr}	Nd	Pm	\mathbf{Sm}	$\mathbf{E}\mathbf{u}$	Gd	Tb	$\mathbf{D}\mathbf{y}$	Но	${f Er}$	Tm	$\mathbf{Y}\mathbf{b}$	${ m Lu}$
	Lanthanum 138.90547	Cerium 140.116	Praseodymium 140.90766	Neodymium 144.242	Promethium (145)	Samarium 150.36	Europium 151.964	Gadolinium 157.25	Terbium 158.925354	Dysprosium 162.500	Holmium 164.930329	Erbium 167.259	Thulium 168.934219	Ytterbium 173.045	Lutetium 174.9668
	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103
**	Ac	${f Th}$	Pa	\mathbf{U}	Np	$\mathbf{P}\mathbf{u}$	\mathbf{Am}	\mathbf{Cm}	$\mathbf{B}\mathbf{k}$	\mathbf{Cf}	$\mathbf{E}\mathbf{s}$	${f Fm}$	Md	\mathbf{No}	\mathbf{Lr}
	Actinium (227)	Thorium 232.0377	Protactinium 231.03588	Uranium 238.02891	Neptunium (237)	Plutonium (239)	Americium (243)	Curium (247)	Berkelium (247)	Californium (252)	Einsteinium (252)	Fermium (257)	Mendelevium (258)	Nobelium (259)	Lawrencium (262)

Constants

atmic mass constant	$m_{ m u}$	=	$1.66053906660(50)\times10^{-27}\mathrm{kg}$	speed of light in vacuum	c	=
Avogadro constant	$N_{ m A}$	=	$6.02214076\times10^{23}\mathrm{mol^{-1}}$	vacuum permittivity	ε_0	=
Boltzmann constant	k	=	$1.380649 \times 10^{-23}\mathrm{J/K}$	vacuum permeability	μ_0	=
gas constant	R	=	$8.31446261815324 \times 10^{3} \mathrm{L}\cdot\mathrm{Pa}\cdot\mathrm{K}^{-1}\cdot\mathrm{mol}^{-1}$	elementary charge	e	=
Faraday constant	F	=	$9.64853321233100184\times10^4\mathrm{C/mol}$	electron mass	$m_{ m e}$	=
moler volume $(0 {}^{\circ}\text{C}, 1 \text{atm})$	$V_{ m m}$	=	$22.41396954\cdots L/mol$	Planck constant	h	=
Stefan–Boltzmann constant	σ	=	$5.670374419\dots \times 10^{-8}\mathrm{W\cdot m^{-2}\cdot K^{-4}}$	Bohr radius	a_0	=
standard atmosphere	$1\mathrm{atm}$	=	$101325\mathrm{Pa}$	Rydberg constant	R_{∞}	=

 $299792458\,\mathrm{m/s}$

 $8.854\,187\,812\,8(13) \times 10^{-12}\,\mathrm{F/m}$ $1.256\,637\,062\,12(19) \times 10^{-6}\,\mathrm{N\cdot A^{-2}}$

 $\begin{array}{l} 1.602\,176\,634\times10^{-19}\,\mathrm{C} \\ 9.109\,383\,701\,5(28)\times10^{-31}\,\mathrm{kg} \\ 6.626\,070\,15\times10^{-34}\,\mathrm{J\cdot s} \\ 5.291\,772\,109\,03(80)\times10^{-11}\,\mathrm{m} \\ 1.097\,373\,156\,816\,0(21)\times10^7\,\mathrm{m}^{-1} \end{array}$