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$$\frac{F}{l} = k \frac{I_1 I_2}{d}$$

$$d = \frac{1}{p}$$

$$F = BIl \sin \theta$$

$$M = m - 5 \log \left( \frac{d}{10} \right)$$

$$\tau = Fd$$

$$\frac{I_A}{I_B} = 100^{(m_B - m_A)/5}$$

$$\tau = nBIA \cos \theta$$

$$\frac{V_p}{V_s} = \frac{n_p}{n_s}$$

$$m_1 + m_2 = \frac{4\pi^2 r^3}{GT^2}$$

$$F = qvB \sin \theta$$

$$\frac{1}{\lambda} = R \left( \frac{1}{n_f^2} - \frac{1}{n_i^2} \right)$$

$$E = \frac{V}{d}$$

$$\lambda = \frac{h}{mv}$$

$$E = hf$$

$$c = f\lambda$$

$$A_0 = \frac{V_{\text{out}}}{V_{\text{in}}}$$

$$Z = \rho v$$

$$\frac{V_{\text{out}}}{V_{\text{in}}} = - \frac{R_f}{R_i}$$

$$\frac{I_r}{I_0} = \frac{[Z_2 - Z_1]^2}{[Z_2 + Z_1]^2}$$

## PERIODIC TABLE OF THE ELEMENTS

KEY		Atomic Number		Atomic Weight		Symbol of element		Name of element																											
		79	Au	197.0																															
		Gold																																	
1	H 1.008 Hydrogen	2	He 4.003 Helium	5	B 10.81 Boron	6	C 12.01 Carbon	7	N 14.01 Nitrogen	8	O 16.00 Oxygen	9	F 19.00 Fluorine	10	Ne 20.18 Neon																				
3	Li 6.941 Lithium	4	Be 9.012 Beryllium	11	Na 22.99 Sodium	12	Mg 24.31 Magnesium	13	Al 26.98 Aluminium	14	Si 28.09 Silicon	15	P 30.97 Phosphorus	16	S 32.07 Sulfur	17	Cl 35.45 Chlorine	18	Ar 39.95 Argon																
19	K 39.10 Potassium	20	Ca 40.08 Calcium	21	Sc 44.96 Scandium	22	Ti 47.87 Titanium	23	V 50.94 Vanadium	24	Cr 52.00 Chromium	25	Mn 54.94 Manganese	26	Fe 55.85 Iron	27	Co 58.93 Cobalt	28	Ni 58.69 Nickel	29	Cu 63.55 Copper	30	Zn 65.41 Zinc	31	Ga 69.72 Gallium	32	Ge 72.64 Germanium	33	As 74.92 Arsenic	34	Se 78.96 Selenium	35	Br 79.90 Bromine	36	Kr 83.80 Krypton
37	Rb 85.47 Rubidium	38	Sr 87.62 Strontium	39	Y 88.91 Yttrium	40	Zr 91.22 Zirconium	41	Nb 92.91 Niobium	42	Mo 95.94 Molybdenum	43	Tc [97.91] Technetium	44	Ru 101.1 Ruthenium	45	Rh 102.9 Rhodium	46	Pd 106.4 Palladium	47	Ag 107.9 Silver	48	Cd 112.4 Cadmium	49	In 114.8 Indium	50	Sn 118.7 Tin	51	Sb 121.8 Antimony	52	Te 127.6 Tellurium	53	I 126.9 Iodine	54	Xe 131.3 Xenon
55	Cs 132.9 Caesium	56	Ba 137.3 Barium	57-71	Lanthanoids	72	Hf 178.5 Hafnium	73	Ta 180.9 Tantalum	74	W 183.8 Tungsten	75	Re 186.2 Rhenium	76	Os 190.2 Osmium	77	Ir 192.2 Iridium	78	Pt 195.1 Platinum	79	Au 197.0 Gold	80	Hg 200.6 Mercury	81	Tl 204.4 Thallium	82	Pb 207.2 Lead	83	Bi 209.0 Bismuth	84	Po [209.0] Polonium	85	At [210.0] Astatine	86	Rn [222.0] Radon
87	Fr [223] Francium	88	Ra [226] Radium	89-103	Actinoids	104	Rf [261] Rutherfordium	105	Db [262] Dubnium	106	Sg [266] Seaborgium	107	Bh [264] Bohrium	108	Hs [277] Hassium	109	Mt [268] Meitnerium	110	Ds [271] Darmstadtium	111	Rg [272] Roentgenium														

### Lanthanoids

57	La 138.9 Lanthanum	58	Ce 140.1 Cerium	59	Pr 140.9 Praseodymium	60	Nd 144.2 Neodymium	61	Pm [145] Promethium	62	Sm 150.4 Samarium	63	Eu 152.0 Europium	64	Gd 157.3 Gadolinium	65	Tb 158.9 Terbium	66	Dy 162.5 Dysprosium	67	Ho 164.9 Holmium	68	Er 167.3 Erbium	69	Tm 168.9 Thulium	70	Yb 173.0 Ytterbium	71	Lu 175.0 Lutetium
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### Actinoids

89	Ac [227] Actinium	90	Th 232.0 Thorium	91	Pa 231.0 Protactinium	92	U 238.0 Uranium	93	Np [237] Neptunium	94	Pu [244] Plutonium	95	Am [243] Americium	96	Cm [247] Curium	97	Bk [247] Berkelium	98	Cf [251] Californium	99	Es [252] Einsteinium	100	Fm [257] Fermium	101	Md [258] Mendelevium	102	No [259] Nobelium	103	Lr [262] Lawrencium
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For elements that have no stable or long-lived nuclides, the mass number of the nuclide with the longest confirmed half-life is listed between square brackets.

The International Union of Pure and Applied Chemistry Periodic Table of the Elements (October 2005 version) is the principal source of data. Some data may have been modified.