

X857/75/11

Physics Relationships sheet

FRIDAY, 13 MAY 1:00 PM - 3:30 PM





$$d = vt$$

$$d = \overline{v}t$$

$$s = vt$$

$$s = \overline{v}t$$

$$a = \frac{v - u}{t}$$

$$F = ma$$

$$W = mg$$

$$E_w = Fd$$

$$E_p = mgh$$

$$E_k = \frac{1}{2}mv^2$$

$$Q = It$$

$$V = IR$$

$$V_2 = \left(\frac{R_2}{R_1 + R_2}\right) V_S$$

$$\frac{V_1}{V_2} = \frac{R_1}{R_2}$$

$$R_T = R_1 + R_2 + \dots$$

$$\frac{1}{R_T} = \frac{1}{R_1} + \frac{1}{R_2} + \dots$$

$$P = \frac{E}{t}$$

$$P = IV$$

$$P = I^2 R$$

$$P = \frac{V^2}{R}$$

$$E_h = cm\Delta T$$

$$E_h = ml$$

$$p = \frac{F}{A}$$

$$p_1V_1 = p_2V_2$$

$$\frac{p_1}{T_1} = \frac{p_2}{T_2}$$

$$\frac{V_1}{T_1} = \frac{V_2}{T_2}$$

$$\frac{pV}{T}$$
 = constant

$$f = \frac{N}{t}$$

$$v = f\lambda$$

$$T = \frac{1}{f}$$

$$A = \frac{N}{t}$$

$$D = \frac{E}{m}$$

$$H = Dw_r$$

$$\dot{H} = \frac{H}{t}$$

Additional Relationships

Circle

circumference = $2\pi r$

area =
$$\pi r^2$$

Sphere

area =
$$4\pi r^2$$

volume =
$$\frac{4}{3}\pi r^3$$

Trigonometry

$$\sin \theta = \frac{\text{opposite}}{\text{hypotenuse}}$$

$$\cos\theta = \frac{\text{adjacent}}{\text{hypotenuse}}$$

$$\tan\theta = \frac{\text{opposite}}{\text{adjacent}}$$

$$\sin^2\theta + \cos^2\theta = 1$$

Electron arrangements of elements

		87 Fr 2,8,18,32, 18,8,1 Francium	55 Cs 2,8,18,18, 8,1 Caesium	Rb 2,8,18,8,1 Rubidium	Potassium 37	2,8,8,1	⊼ 3	Sodium	2,8,1	Z 1	Lithium	2,1	⊑.	ω	1 Hydrogen	I -	(1)	Group 1
	Lan	88 Ra 2,8,18,32, 18,8,2 Radium	56 Ba 2,8,18,18, 8,2 Barium	Sr 2,8,18,8,2 Strontium	Calcium 38	2,8,8,2	20 Ca	Magnesium	2,8,2	12 M g	Beryllium	2,2	Be	4	(2)			Group 2
Actinides	Lanthanides	89 Ac 2,8,18,32, 18,9,2 Actinium	57 La 2,8,18,18, 9,2 Lanthanum	Y 2,8,18,9,2 Yttrium	Scandium 39	2,8,9,2	21 Sc	(3)										
89 Ac 2,8,18,32, 18,9,2 Actinium	57 La 2,8,18, 18,9,2 Lanthanum	104 Rf 2,8,18,32, 32,10,2 Rutherfordium	72 Hf 2,8,18,32, 10,2 Hafnium	Zr 2,8,18, 10,2 Zirconium	Titanium 40	2,8,10,2	22 Ti	(4)								Key		
90 Th 2,8,18,32, 18,10,2 Thorium	58 Ce 2,8,18, 20,8,2 Cerium	105 Db 2,8,18,32, 32,11,2 Dubnium	73 Ta 2,8,18, 32,11,2 Tantalum	Nb 2,8,18, 12,1 Niobium	Vanadium 41	2,8,11,2	23 Y	(5)						Electro		Atc		_
91 Pa 2,8,18,32, 20,9,2 Protactinium	59 Pr 2,8,18,21, 8,2 Praseodymium	106 Sg 2,8,18,32, 32,12,2 Seaborgium	74 W 2,8,18,32, 12,2 Tungsten	Mo 2,8,18,13, 1 Molybdenum	Chromium 42	2,8,13,1	24 Cr	(6)					Name	Electron arrangement	Symbol	Atomic number		בופכנו סוו
92 U 2,8,18,32, 21,9,2 Uranium	60 Nd 2,8,18,22, 8,2 Neodymium	107 Bh 2,8,18,32, 32,13,2 Bohrium	75 Re 2,8,18,32, 13,2 Rhenium	Tc 2,8,18,13, 2	Manganese 43	2,8,13,2	25 Mn	(7)	וו מווצונוטוו פופווופוונא					ement		ber		מוומווצכו
93 Np 2,8,18,32, 22,9,2 Neptunium	61 Pm 2,8,18,23, 8,2 Promethium	108 Hs 2,8,18,32, 32,14,2 Hassium	76 Os 2,8,18,32, 14,2 Osmium	Ru 2,8,18,15, 1	Iron 44	2,8,14,2	26 Fe	(8)	i eterileric									ומונט טו
94 Pu 2,8,18,32, 24,8,2 Plutonium	62 Sm 2,8,18,24, 8,2 Samarium	109 Mt 2,8,18,32, 32,15,2 Meitnerium	77 Ir 2,8,18,32, 15,2 Iridium	Rh 2,8,18,16, 1 Rhodium	Cobalt 45	2,8,15,2	27 Co	(9)	V	1								בנפכנו סוו מווצפווופוונט טו פנפווופוונט
95 Am 2,8,18,32, 25,8,2 Americium	63 Eu 2,8,18,25, 8,2 Europium	110 Ds 2,8,18,32, 32,17,1 Darmstadtium	78 Pt 2,8,18,32, 17,1 Platinum	Pd 2,8,18, 18,0 Palladium	Nickel 46	2,8,16,2	28 Ni	(10)										·
96 Cm 2,8,18,32, 25,9,2 Curium	64 Gd 2,8,18,25, 9,2 Gadolinium	110 111 112 Ds Rg Cn 2,8,18,32, 2,8,18,32, 2,8,18,32, 32,17,1 32,18,1 32,18,2 Darmstadtium Roentgenium Copernicium	79 Au 2,8,18, 32,18,1 Gold	Ag 2,8,18, 18,1 Silver	Copper 47	2,8,18,1	29 C u	(11)										
97 Bk 2,8,18,32, 27,8,2 Berkelium	65 Tb 2,8,18,27, 8,2 Terbium	112 Cn 2,8,18,32, 32,18,2 Copernicium	80 Hg 2,8,18, 32,18,2 Mercury	Cd 2,8,18, 18,2 Cadmium	Zinc 48	2,8,18,2	30 Zn	(12)										
98 Cf 2,8,18,32, 28,8,2 Californium	66 Dy 2,8,18,28, 8,2 Dysprosium		81 T (2,8,18, 32,18,3 Thallium	In 2,8,18, 18,3 Indium	Gallium 49	2,8,18,3	31 Ga	Aluminium	2,8,3	≥ 13	Boron	2,3	В	5	(13)			Group 3
99 Es 2,8,18,32, 29,8,2 Einsteinium	67 Ho 2,8,18,29, 8,2 Holmium		82 Pb 2,8,18, 32,18,4 h Lead	2,	Germanium 50	2,	32 Ge		2,8,4	<u>.</u> 1	Carbon	2,4	C	6	(14)			3 Group 4
100 Fm 2,8,18,32, 30,8,2 Fermium	68 Er 2,8,18,30, 8,2 Erbium		83 Bi 2,8,18, 4 32,18,5 8ismuth	2, An1	ım Arsenic 51	4 2,8,18,5	33 As	Ph	2,8,5	D 15	Nitrogen	2,5	z	7	(15)			4 Group 5
101 Md 2,8,18,32, 31,8,2 Mendelevium	69 Tm 2,8,18,31, 8,2 Thulium		84 Po 2,8,18, 32,18,6	2, Tel	Selenium 52		34 Se		2,8,6	^ 16	n Oxygen	2,6	0	∞	(16)			5 Group 6
102 No 2,8,18,32, 32,8,2 Nobelium	70 Yb 2,8,18,32, 8,2 Ytterbium		85 At 2,8,18, 6 32,18,7 m Astatine	2,	m Bromine 53	6 2,8,18,7	35 Br		2,8,7	<u> </u>	1 Fluorine	2,7	η.	9	(17)			6 Group 7
103 Lr 2,8,18,32, 32,9,2 Lawrencium	71 Lu 2,8,18,32, 9,2 Lutetium		86 Rn 2,8,18, 7 32,18,8 e Radon	× .2	e Krypton 54	7 2,8,18,8	36		2,8,8	18	e Neon	2,8	Z e	10	2 Helium	He	(18)	7 Group 0
						∞		<u></u>										0