

PH30S TABLE OF INFORMATION

CONSTANTS			
Proton mass,	$m_p = 1.67 \times 10^{-27} \text{ kg}$	Elementary charge,	$e = 1.60 \times 10^{-19} \text{ C}$
Neutron mass,	$m_n = 1.67 \times 10^{-27} \text{ kg}$	Coulomb's law constant,	$k = 9.0 \times 10^9 \text{ N}\cdot\text{m}^2/\text{C}^2$
Electron mass,	$m_e = 9.11 \times 10^{-31} \text{ kg}$	Universal gravitational constant,	$G = 6.67 \times 10^{-11} \text{ m}^3/\text{kg}\cdot\text{s}^2$
Mass of Earth,	$m_{Earth} = 5.98 \times 10^{24} \text{ kg}$	Acceleration due to gravity at Earth's surface,	$g = 9.8 \text{ m/s}^2$
Radius of Earth,	$r_{Earth} = 6.38 \times 10^6 \text{ m}$	Speed of light,	$c = 3.00 \times 10^8 \text{ m/s}$

UNIT SYMBOLS					
meter,	m	second,	s	joule,	J
				watt,	W
				volt,	V
kilogram,	kg	newton,	N	hertz,	Hz
				coulomb,	C
				ohm,	Ω

METRIC PREFIXES		
Factor	Prefix	Symbol
10^{12}	tera	T
10^9	giga	G
10^6	mega	M
10^3	kilo	k
10^{-2}	centi	c
10^{-3}	milli	m
10^{-6}	micro	μ
10^{-9}	nano	n
10^{-12}	pico	p

GEOMETRY	
Rectangle $A = bh$ Triangle $A = \frac{1}{2}bh$ Circle $A = \pi r^2$ $C = 2\pi r$ Rectangular solid $V = \ell wh$ Cylinder $V = \pi r^2 \ell$ $S = 2\pi r \ell + 2\pi r^2$ Sphere $V = \frac{4}{3}\pi r^3$ $S = 4\pi r^2$	A = area C = circumference V = volume S = surface area b = base h = height ℓ = length w = width r = radius

PH30S EQUATIONS

MECHANICS	ELECTRICITY AND MAGNETISM	
$v = v_0 + at$ $x = \left(\frac{v_0 + v}{2}\right)t$ $x = v_0t + \frac{1}{2}at^2$ $v^2 = v_0^2 + 2ax$ $F_{net} = \sum F = ma$ $F_g = mg$ $ F_f = \mu F_N $	$E = \frac{F_E}{q}$ $F_M = BIl \sin \theta$ $B = \text{magnetic field}$ $E = \text{electric field}$ $F = \text{force}$ $I = \text{current}$ $l = \text{length}$ $q = \text{point charge}$	
	<th data-bbox="820 827 1479 884">WAVES AND OSCILLATIONS</th>	WAVES AND OSCILLATIONS
	$T = \frac{1}{f}$ $v = f\lambda$ $v_s = 331 + 0.6T_{air}$ $\frac{n_1}{n_2} = \frac{\sin \theta_2}{\sin \theta_1}$ $\frac{\sin \theta_1}{\sin \theta_2} = \frac{v_1}{v_2} = \frac{\lambda_1}{\lambda_2}$ $\lambda = \frac{\Delta x d}{L}$ $d = \text{distance between slits}$ $f = \text{frequency}$ $L = \text{distance between slits and screen}$ $n = \text{index of refraction}$ $T = \text{period}$ $T_{air} = \text{air temperature}$ $v = \text{speed (velocity)}$ $\Delta x = \text{distance between fringes}$ $\lambda = \text{wavelength}$ $\theta = \text{angle}$	