

Physics 30S – Data Sheet

Equation Chart

<p style="text-align: center;">Mechanics</p> $\bar{v} = \frac{\Delta \bar{d}}{\Delta t} \quad \bar{v}_{avg} = \frac{\bar{v}_f + \bar{v}_i}{2} \quad \bar{a} = \frac{\Delta \bar{v}}{\Delta t}$ $\bar{v}_f = \bar{v}_i + \bar{a}t \quad \bar{d} = \bar{v}_i t + \frac{1}{2} \bar{a} t^2$ $\bar{d} = \left(\frac{\bar{v}_i + \bar{v}_f}{2} \right) \cdot t \quad \bar{v}_f^2 = \bar{v}_i^2 + 2\bar{a}\bar{d}$ $\sum \vec{F} = m\vec{a} \quad \vec{F}_g = m\vec{g}$ $\vec{F}_f = \mu \vec{F}_N$	<p style="text-align: center;">Waves</p> $T = \frac{1}{f}$ $\frac{v_1}{v_2} = \frac{\lambda_1}{\lambda_2} = \frac{n_2}{n_1}$ $\frac{\sin \theta_1}{\sin \theta_2} = \frac{n_2}{n_1}$ $v = \lambda f$ $n = \frac{c}{v}$ $\lambda = \frac{c}{f}$																											
<p style="text-align: center;">Fields</p> $q = N \cdot e$ $\vec{E} = \frac{\vec{F}_e}{q}$ $\vec{F}_M = \vec{B}I \sin \theta$	<p style="text-align: center;">Prefixes Table</p> <table border="1"> <thead> <tr> <th>Factor</th> <th>Prefix</th> <th>Symbol</th> </tr> </thead> <tbody> <tr> <td>10^9</td> <td>giga</td> <td>G</td> </tr> <tr> <td>10^6</td> <td>mega</td> <td>M</td> </tr> <tr> <td>10^3</td> <td>kilo</td> <td>k</td> </tr> <tr> <td>10^{-2}</td> <td>centi</td> <td>c</td> </tr> <tr> <td>10^{-3}</td> <td>milli</td> <td>m</td> </tr> <tr> <td>10^{-6}</td> <td>micro</td> <td>μ</td> </tr> <tr> <td>10^{-9}</td> <td>nano</td> <td>n</td> </tr> <tr> <td>10^{-12}</td> <td>pico</td> <td>p</td> </tr> </tbody> </table>	Factor	Prefix	Symbol	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
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Table of Constants

Gravitational Acceleration	$g = 9.8 \text{ m/s}^2$
Speed of Light in a vacuum	$c = 3.0 \times 10^8 \text{ m/s}$
Elementary Charge	$e = 1.60 \times 10^{-19} \text{ C}$
Mass of an Electron	$m_e = 9.11 \times 10^{-31} \text{ kg}$
Mass of a Proton	$m_p = 1.67 \times 10^{-27} \text{ kg}$