



**GCSE Physics (8463)**

**Physics Equations Sheet**

**[Turn over]**

1	<p>pressure due to a column of liquid          = height of column × density of liquid          × gravitational field strength (g)</p>	$p = h \rho g$
2	<p>(final velocity)<sup>2</sup> – (initial velocity)<sup>2</sup>          = 2 × acceleration × distance</p>	$v^2 - u^2 = 2 a s$
3	<p>force = <math>\frac{\text{change in momentum}}{\text{time taken}}</math></p>	$F = \frac{m \Delta v}{\Delta t}$
4	<p>elastic potential energy          = 0.5 × spring constant × (extension)<sup>2</sup></p>	$E_e = \frac{1}{2} k e^2$
5	<p>change in thermal energy          = mass × specific heat capacity × temperature change</p>	$\Delta E = m c \Delta \theta$

6	period = $\frac{1}{\text{frequency}}$	$T = \frac{1}{f}$
7	magnification = $\frac{\text{image height}}{\text{object height}}$	
8	force on a conductor (at right angles to a magnetic field) carrying a current = magnetic flux density × current × length	$F = B I l$
9	thermal energy for a change of state = mass × specific latent heat	$E = m L$

ω

Equations 1, 3, 8, 10 and 11 are for Higher Tier only.

[Turn over]

10	<p style="text-align: center;"><b><math>\frac{\text{potential difference across primary coil}}{\text{potential difference across secondary coil}}</math></b></p> <p style="text-align: center;"><b><math>= \frac{\text{number of turns in primary coil}}{\text{number of turns in secondary coil}}</math></b></p>	$\frac{V_p}{V_s} = \frac{n_p}{n_s}$
11	<p style="text-align: center;"><b>potential difference across primary coil × current in primary coil</b></p> <p style="text-align: center;"><b>= potential difference across secondary coil × current in secondary coil</b></p>	$V_p I_p = V_s I_s$
12	<p style="text-align: center;"><b>For gases: pressure × volume = constant</b></p>	$p V = \text{constant}$

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