



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

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

[Turn over]

10	<p><u>potential difference across primary coil</u>  <u>potential difference across secondary coil</u>  = <u>number of turns in primary coil</u>  <u>number of turns in secondary coil</u></p>	$\frac{V_p}{V_s} = \frac{n_p}{n_s}$
11	<p>potential difference across primary coil  x current in primary coil  = potential difference across secondary coil  x current in secondary coil</p>	$V_p I_p = V_s I_s$
12	<p>For gases: pressure x volume = constant</p>	$pV = \text{constant}$

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