



**GCSE Physics (8463)**

**Physics Equations Sheet**

**[Turn over]**

1	$p = h \rho g$
2	$v^2 - u^2 = 2as$ $(\text{final velocity})^2 - (\text{initial velocity})^2$ $= 2 \times \text{acceleration} \times \text{distance}$
3	$F = \frac{m \Delta v}{\Delta t}$ $\text{force} = \frac{\text{change in momentum}}{\text{time taken}}$
4	$E_e = \frac{1}{2} k e^2$ $\text{elastic potential energy}$ $= 0.5 \times \text{spring constant} \times (\text{extension})^2$
5	$\Delta E = m c \Delta \theta$ $\text{change in thermal energy}$ $= \text{mass} \times \text{specific heat capacity} \times \text{temperature change}$

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

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

**[Turn over]**

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

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

**Insert for GCSE Physics (8463)/E2**