



GCSE Physics (8463)

Physics Equations Sheet

[Turn over]

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| 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)² – (initial velocity)² = 2 × acceleration × distance</p> | $v^2 - u^2 = 2 a s$ |
| 3 | <p>force = $\frac{\text{change in momentum}}{\text{time taken}}$</p> | $F = \frac{m \Delta v}{\Delta t}$ |

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| 4 | elastic potential energy = 0.5 × spring constant × (extension)² | $E_e = \frac{1}{2} k e^2$ |
| 5 | change in thermal energy = mass × specific heat capacity × temperature change | $\Delta E = m c \Delta \theta$ |
| 6 | period = $\frac{1}{\text{frequency}}$ | $T = \frac{1}{f}$ |

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

[Turn over]

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| 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 | $E = m L$ |

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| 10 | <p style="text-align: center;"> potential difference across primary coil <hr/> potential difference across secondary coil = <hr/> number of turns in primary coil <hr/> number of turns in secondary coil </p> | $\frac{V_p}{V_s} = \frac{n_p}{n_s}$ |
| 11 | <p style="text-align: center;"> potential difference across primary coil × current in primary coil = potential difference across secondary coil × current in secondary coil </p> | $V_p I_p = V_s I_s$ |

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

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| 12 | For gases: pressure × volume = constant | $p V =$ <i>constant</i> |
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