Edexcel

GCSE Equation Sheet

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Combined / Physics

Equations in **bold are for Higher Tier** only

Equation highlighted in blue are for Physics only (not Combined)

speed = distance / time

distance travelled = average speed x time

acceleration = change in velocity / time taken

$(\text{final velocity})^2 - (\text{initial velocity})^2 = 2 \times \text{acceleration} \times \text{distance}$

force = mass x acceleration

weight = mass x gravitational field strength

momentum = mass x velocity

force = change in momentum / time

moment of a force = force x distance (normal to the direction of the force)

the sum of clockwise moments = the sum of the anti-clockwise moments (when in equilibrium)

force exerted on a spring = spring constant x extension

energy transferred in stretching = ½ x spring constant x extension^2

pressure = force normal to surface / area of surface

pressure due to a column of liquid = height of column x density of liquid x gravitational field strength

gravitational potential energy = mass x gravitational field strength x change in vertical height

kinetic energy = ½ x mass x speed^2

$$\text{efficiency} = \frac{\text{useful energy transferred by the device}}{\text{total energy supplied to the device}}$$

work done = force x distance (moved in the direction of the force)

power = work done / time taken

wave speed = frequency x wavelength

wave speed = distance / time

energy transferred = charge moved x potential difference

charge = current x time

potential difference = current x resistance

energy transferred = current x potential difference x time

power = energy transferred / time taken

power = current x potential difference

power = current^2 x resistance

density = mass / volume

change in thermal energy = mass x specific heat capacity x change in temperature

thermal energy for a change of state = mass x specific latent heat

$\text{pressure}_1 \times \text{volume}_1 = \text{pressure}_2 \times \text{volume}_2$

force on a conductor carrying a current = magnetic flux density x current x length

$$\frac{\textbf{potential difference across primary coil}}{\textbf{potential difference across secondary coil}} = \frac{\textbf{number of turns in primary coil}}{\textbf{number of turns in secondary coil}}$$

potential difference across primary coil x current in primary coil = potential difference across secondary coil x current in secondary coil