



IGCSE Equations

v1.0 Jun 2021

Co-ordinated / Physics



Equations in bold are for Extended only (not Core)

Equations highlighted in blue are for Physics only (not Co-ordinated)

average speed = total distance / total time

acceleration = change in velocity / time taken

weight = mass x gravitational field strength

density = mass / volume

force = spring constant x extension

force = mass x acceleration

moment = force x perpendicular distance from the pivot

momentum = mass x velocity

impulse = force x time for which it acts = change in momentum

kinetic energy = $\frac{1}{2}$ x mass x speed²

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

work done = force x distance moved = energy transferred

efficiency = $\frac{\text{useful energy output}}{\text{total energy input}}$ x 100%

efficiency = $\frac{\text{useful power output}}{\text{total power input}}$ x 100%

power = energy transferred / time

pressure = force / area

change in pressure = change in depth x density of liquid x gravitational field strength

pressure x volume = constant (for a gas)

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

thermal capacity = mass x specific heat capacity

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

wave speed = frequency x wavelength

$n = \sin i / \sin r$

$n = 1 / \sin c$

current = charge / time

resistance = voltage / current

power = current x voltage

energy transferred = current x voltage x time

$\frac{\text{primary voltage}}{\text{secondary voltage}} = \frac{\text{turns on the primary coil}}{\text{turns on the secondary coil}}$

$\text{current in primary coil} \times \text{voltage across the primary coil} = \text{current in secondary coil} \times \text{voltage across the secondary coil}$

