

Force:

$F=ma$ (force = mass × acceleration)

Area under a graph (Trapezium Rule):

$$\frac{1}{2} (a+b)h$$

Weight:

***$W=mg$ (weight = mass ×
gravitational field strength)***

Work done:

$$***W=Fd***$$

***(work = force × distance
moved along the line of action
of the force)***

Kinetic energy:

$$***E_k = \frac{1}{2} mv^2***$$

***(energy of moving object = $\frac{1}{2} \times$
mass \times speed²)***

Gravitational potential energy:

$$***E_p = mgh***$$

***(energy stored in a raised
object = mass × g × height)***

Power (energy/time):

$$***P=E/t***$$

(power = energy transferred ÷ time)

Efficiency:

***Efficiency = useful output ***
total output

(Efficiency = Useful Energy ÷
Total Energy)

Charge flow: $Q=It$
***(charge = current ×
time)***

Potential difference:

$$**V=IR**$$

***(voltage = current ×
resistance)***

Power (electrical):

$$***P=IV***$$

***(power = current ×
voltage)***

Power (resistance):

$$P=I^2R$$

***(power = current² ×
resistance)***

Energy transferred

(power × time):

$$***E=Pt***$$

(energy = power × time)

Energy transferred (charge × voltage):
 $E=QV$ (energy = charge × voltage)

Wave speed:

$$***v = f\lambda*** (***wave speed = frequency × wavelength***)$$

Distance travelled:

$$***s=vt***$$

(distance = speed × time)

Acceleration:

$$***a = \frac{v - u}{t}***$$

(acceleration = change in velocity ÷ time)

Elastic Potential Energy:

$$***E_e = \frac{1}{2} k e^2***$$

***(Elastic Potential Energy = $\frac{1}{2}$
× Spring Constant ×
Extension²)***

Momentum:

$$***p=mv***$$

***(Momentum = Mass ×
Velocity)***

Pressure (on Surface):

$$***p = F/A***$$

***(Pressure = Force ÷
Area)***

Pressure in a Fluid:

$$***p=h\rho g***$$

***(Pressure = Height × Density
× Gravitational Field
Strength)***

Moment of a Force:

$$***M=Fd***$$

***(Moment = Force × Perpendicular
Distance from Pivot)***

SUVAT Equation:

$$v^2 - u^2 = 2as$$

*(Final Velocity² – Initial Velocity² = 2 ×
Acceleration × Distance)*

Force on a Spring:

$$***F=ke***$$

***(Force = Spring
Constant × Extension)***

Gas Law:

$$*pV=constant*$$

*(Pressure × Volume = Constant for a given mass
of gas at constant temperature)*

Number of Moles (Gas):

$$***n=V/24***$$

$$***(Moles = Volume (dm³) ÷ 24)***$$

Titration Calculation:

$$c_1V_1=c_2V_2$$

***(Concentration₁ × Volume₁ = Concentration₂ ×
Volume₂, when reacting 1:1***

Titration Calculation:

$$c_1V_1=c_2V_2$$

***(Concentration₁ × Volume₁ = Concentration₂ ×
Volume₂, when reacting 1:1***