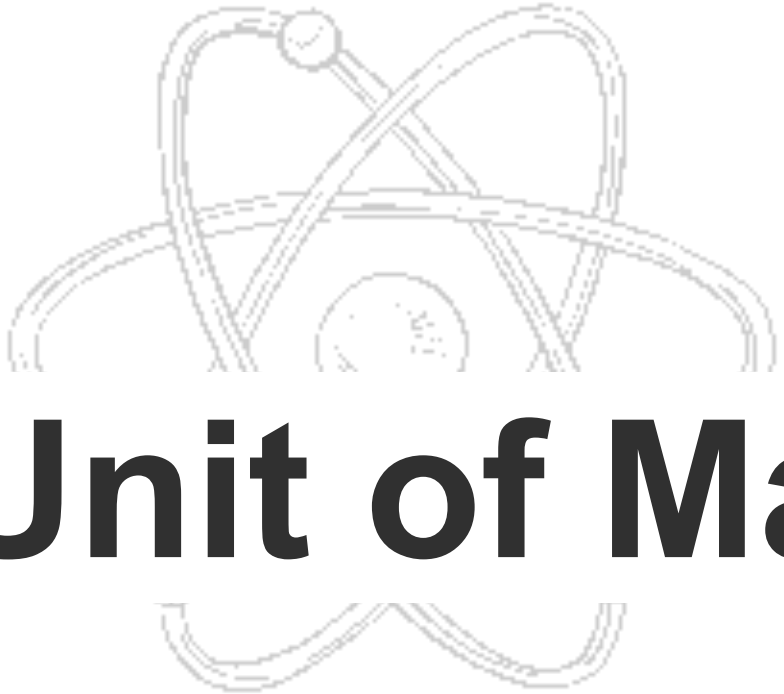
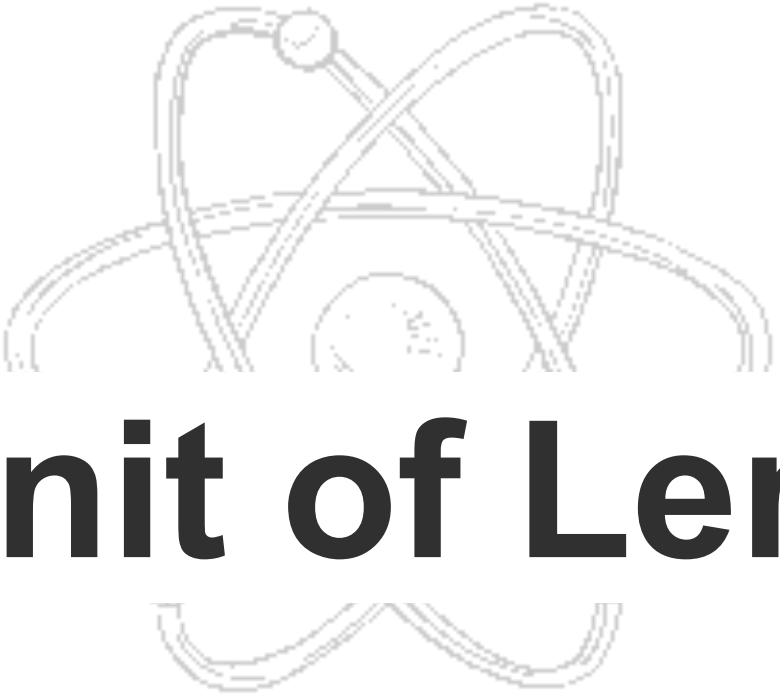


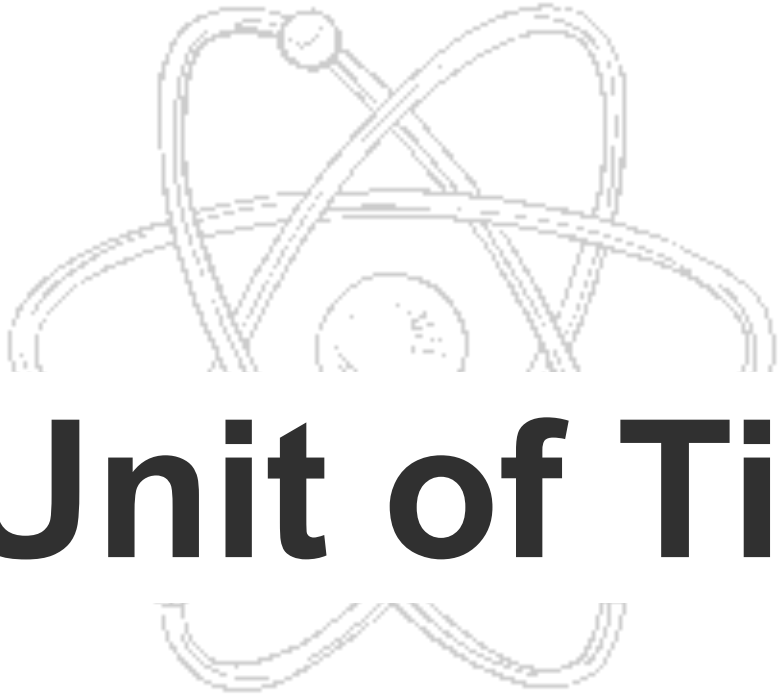
SI Unit of Mass

Kilogram (kg). It is the only SI unit with a prefix!

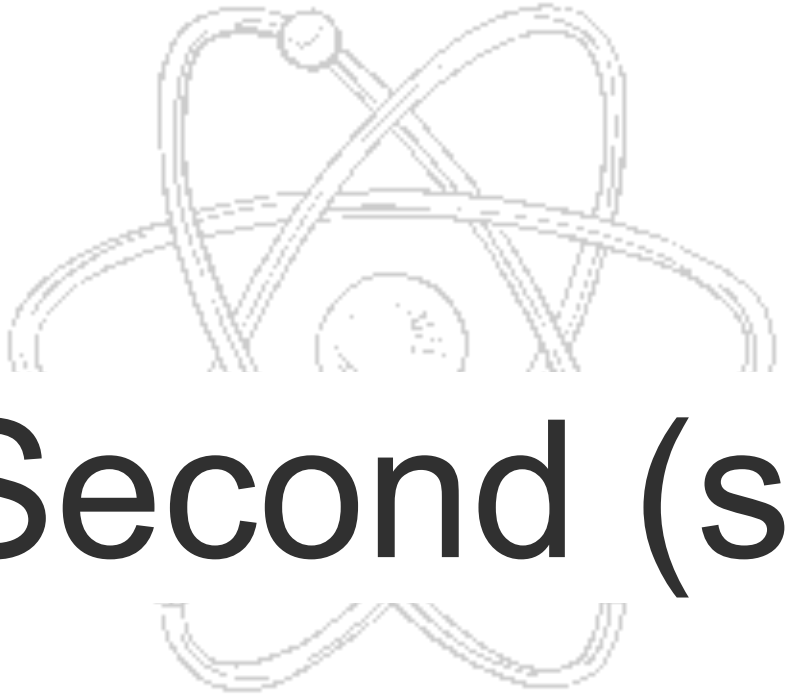


SI Unit of Length

Metre (m)



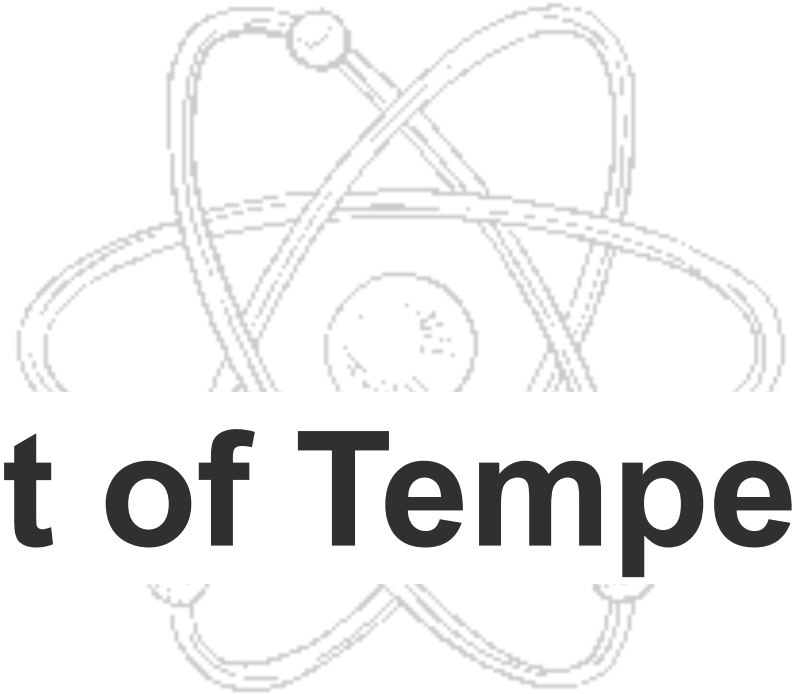
SI Unit of Time



Second (s)

SI Unit of Current

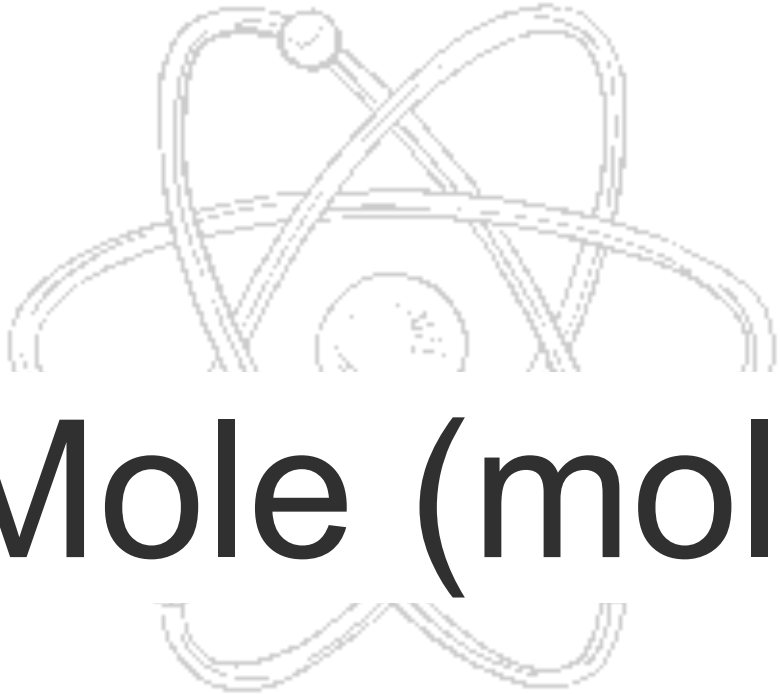
Ampere (A)



SI Unit of Temperature

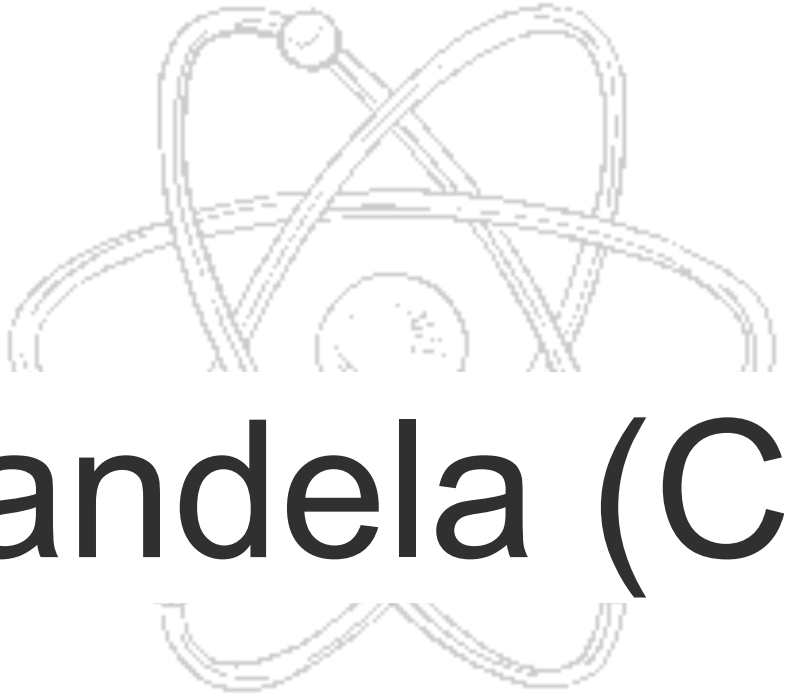
Kelvin (K)

SI Unit of Amount of Substance



Mole (mol)

SI Unit of Luminous Flux



Candela (Cd)

Unit for Force

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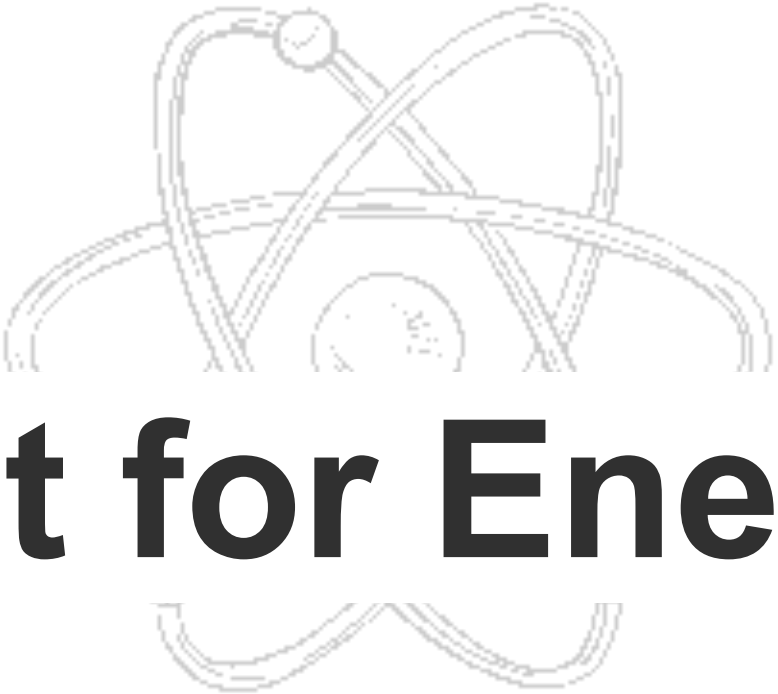
Newton (N)



Unit for Energy

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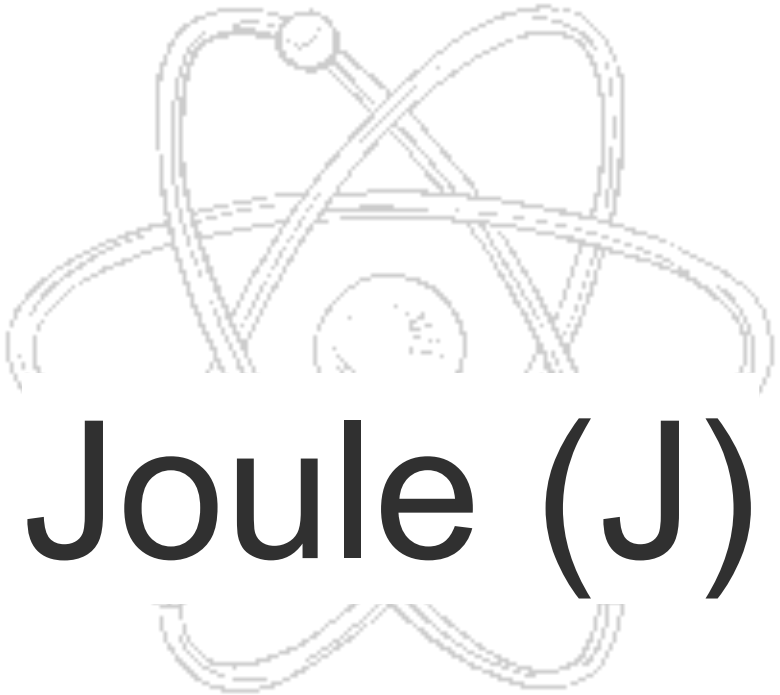
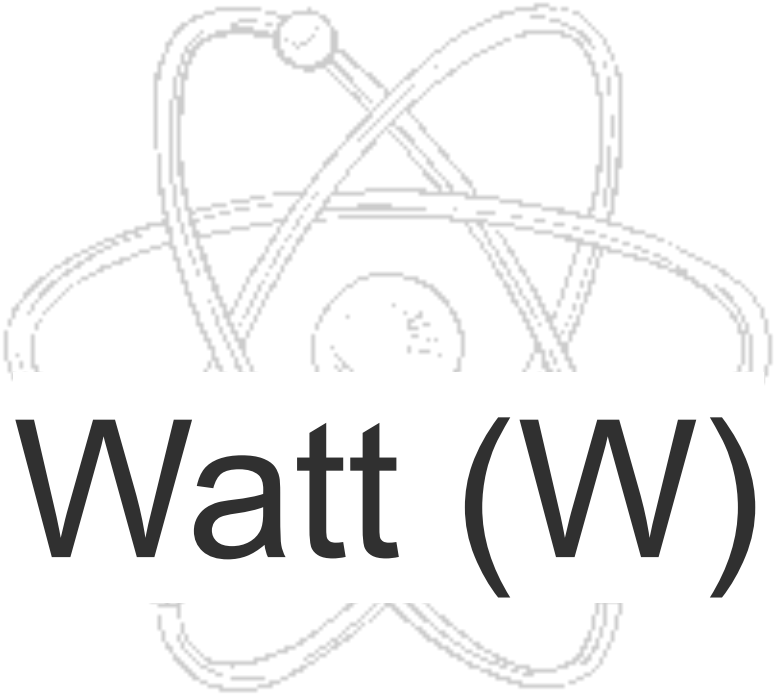


Joule (J)

Unit for Power



Watt (W)

Unit for Charge

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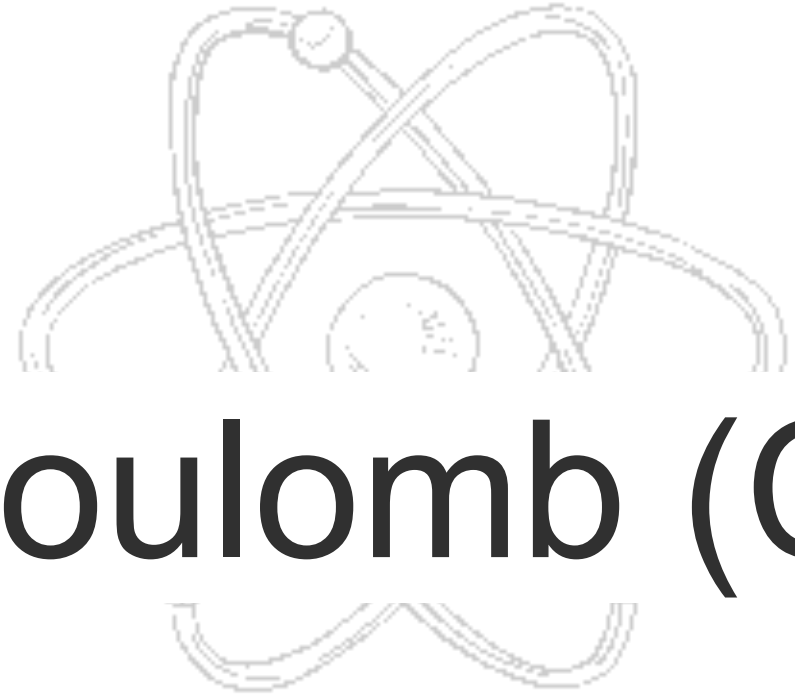
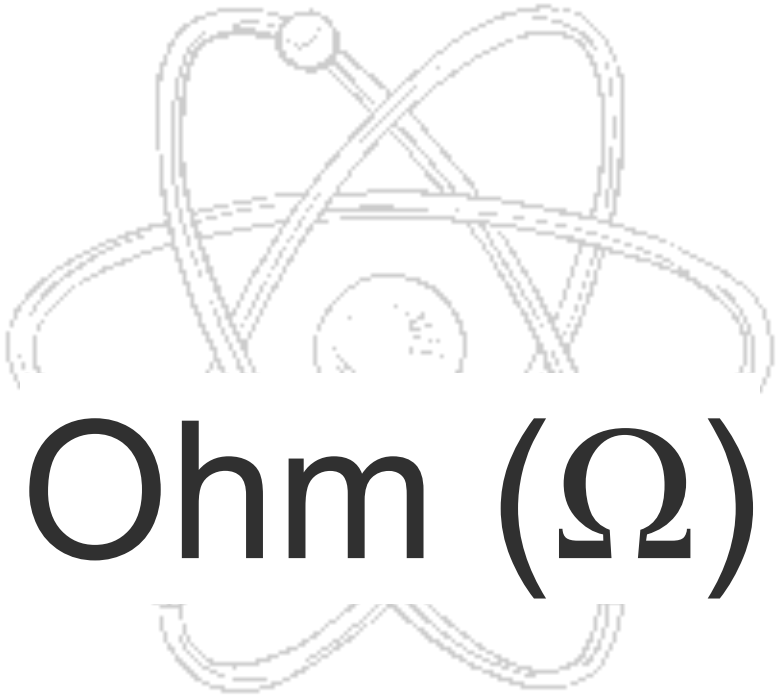
ONLINE



Coulomb (C)

Unit for Resistance

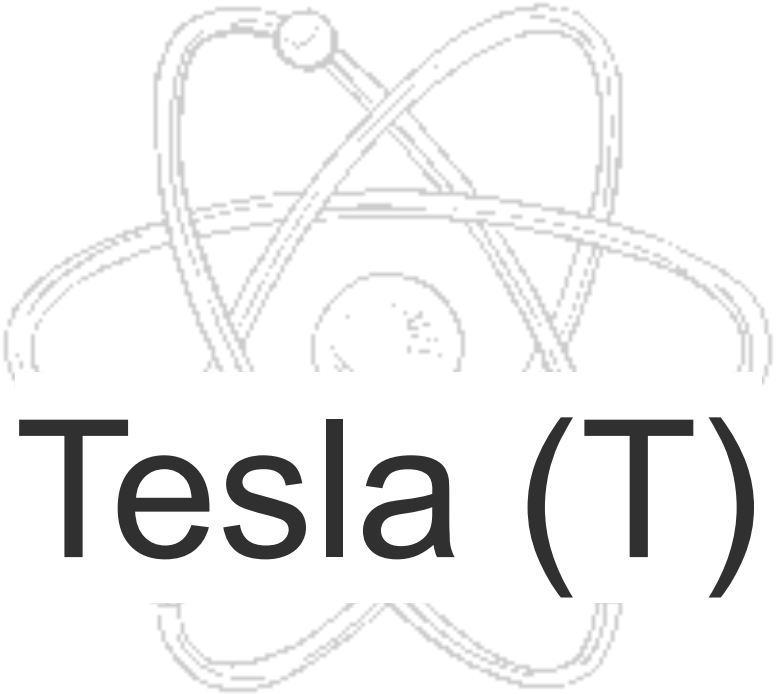


Ohm (Ω)

Unit for Pressure

Pascal (Pa)

Unit for Magnetic Flux Density

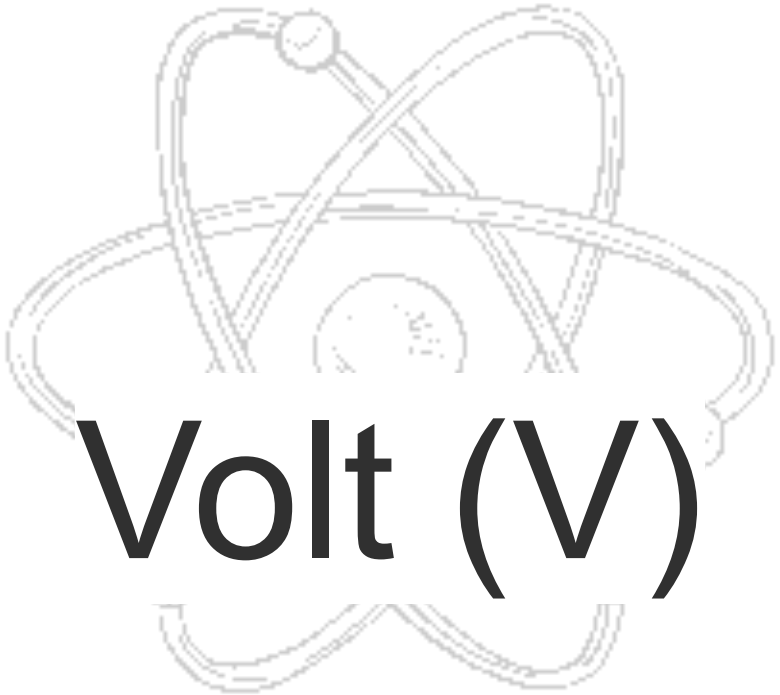


Tesla (T)

Unit for Frequency

Hertz (Hz)

Unit for Potential Difference

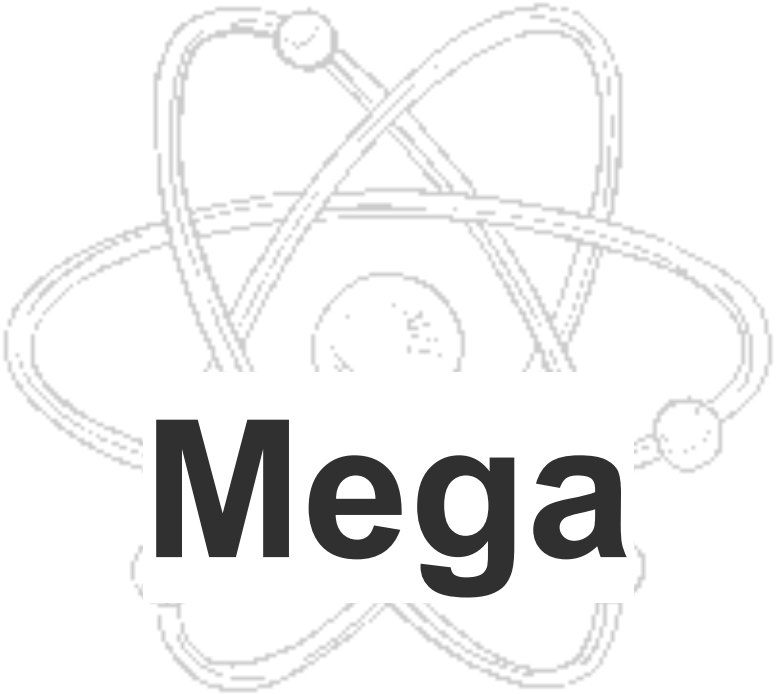


Volt (V)

Prefix: Giga

G; x 10^9

(1 billion)



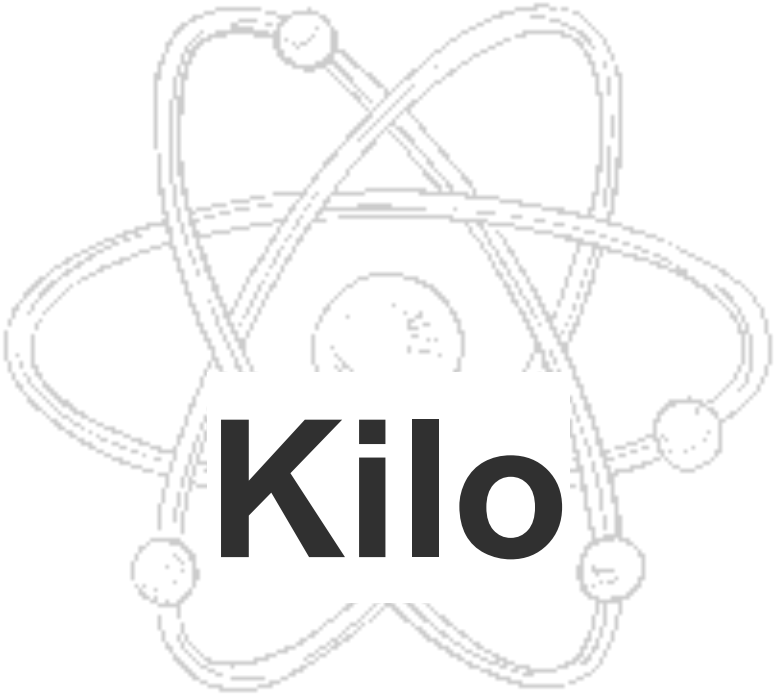
Mega

PHYSICS TUTOR

ONLINE

M; x 10^6

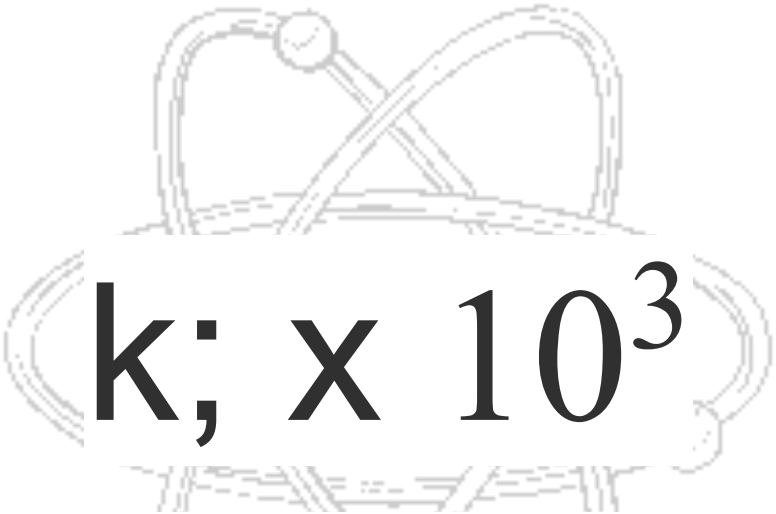
(1 million)



Kilo

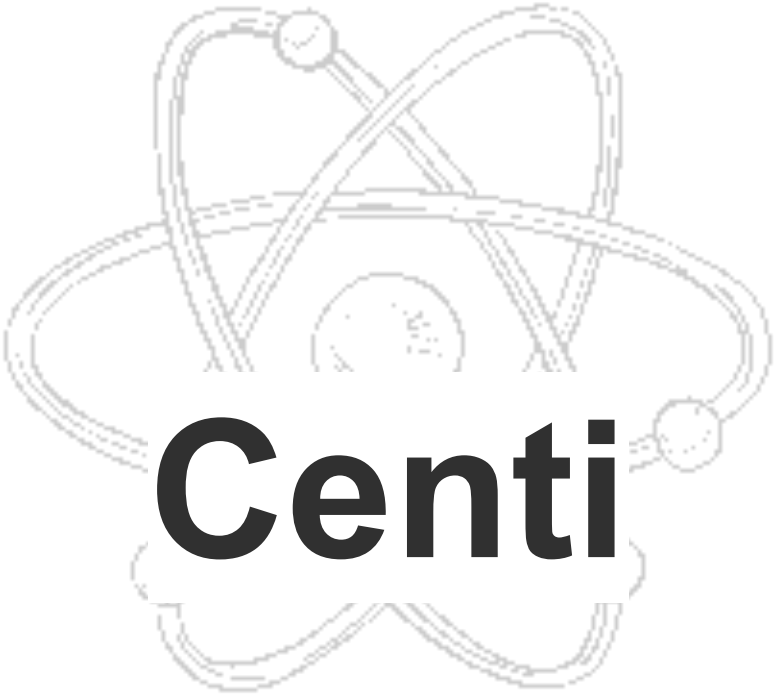
PHYSICS TUTOR

ONLINE



k; x 10^3

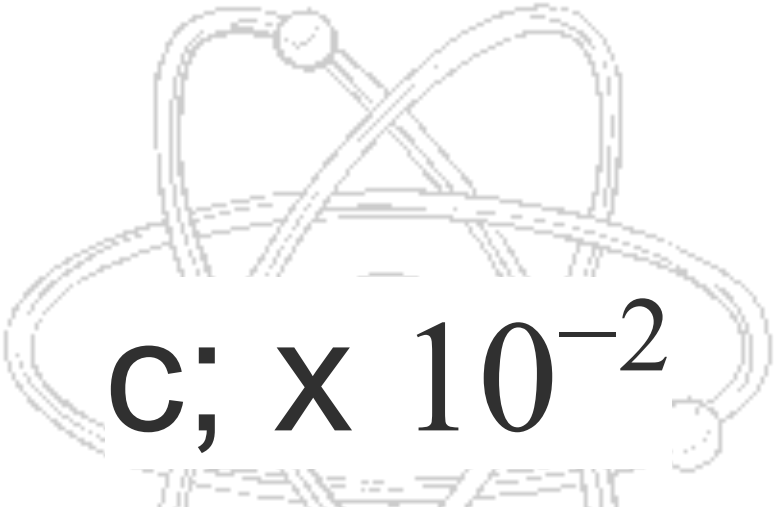
(1 thousand)



Centi

PHYSICS TUTOR

ONLINE

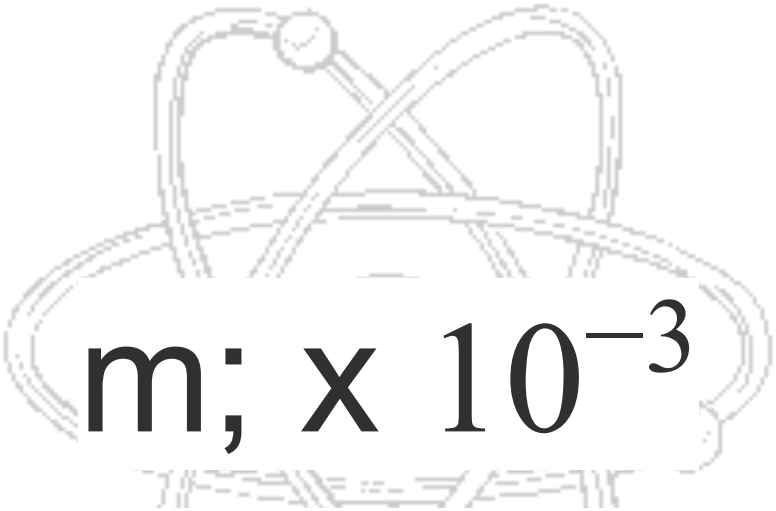


c; x 10^{-2}

or $\div 100$ (1 hundredth)

PHYSICS TUTOR

ONLINE



m; x 10^{-3}

or ÷1,000 (1 thousandth)

Micro

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μ; x 10^{-6}

or $\div 1{,}000{,}000$ (1 millionth)

Nano

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ONLINE

n; x 10^{-9}

or ÷1,000,000,000 (1 billionth)

Purpose of SI Units

Used by all scientists to express quantities from measurements

Standard Form

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Large values may be written as $x10$ to a power (E.g., $X1000 = x10^3$)

Significant Figures

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The number of non-zero figures after a decimal point or previous number (E.g., $0.020 = 2SF$ or $12{,}000 = 2SF$)

Unit Prefixes

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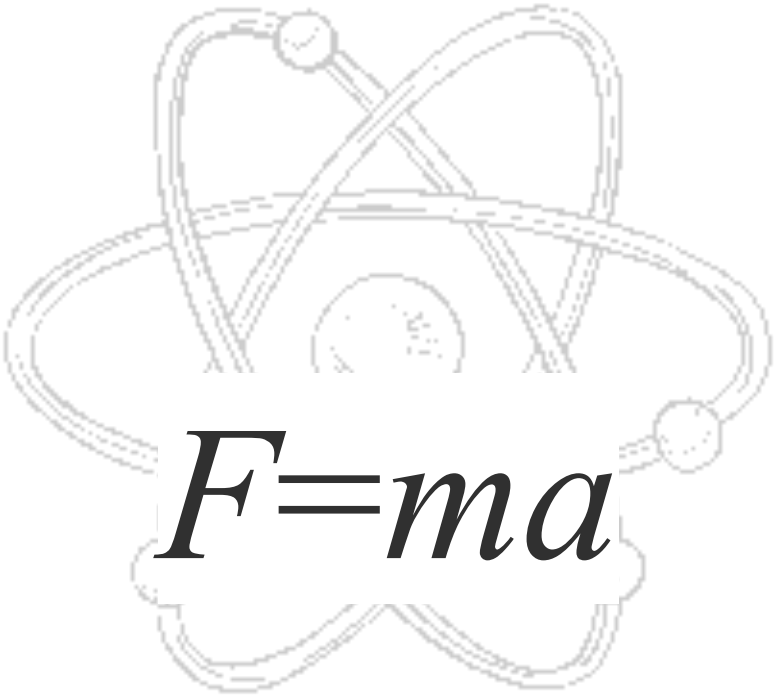
Used to indicate a multiplication factor (Unit Multiples and Submultiples)

Equation: Weight

$$weight = mg$$

Equation: Force (Newton's Second Law)



$$F=ma$$

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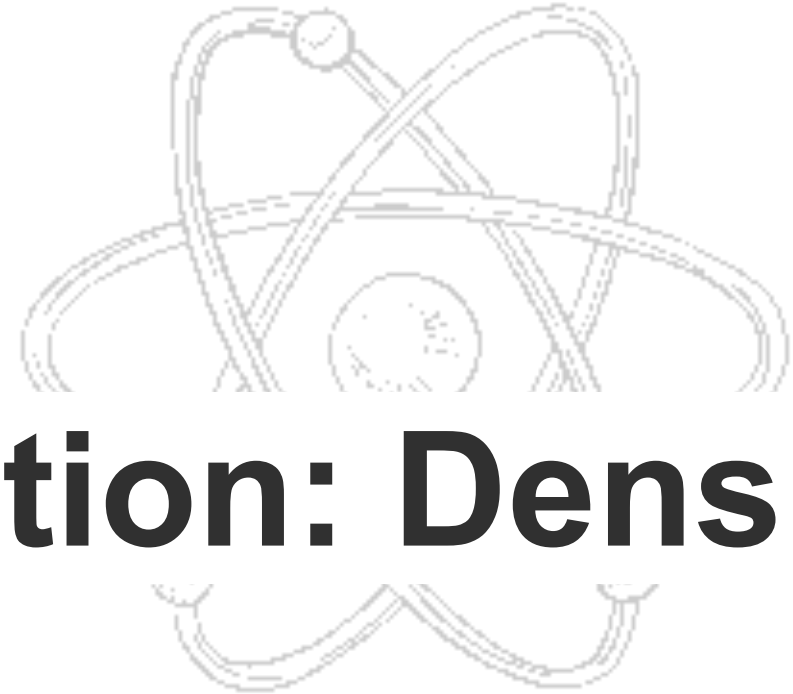
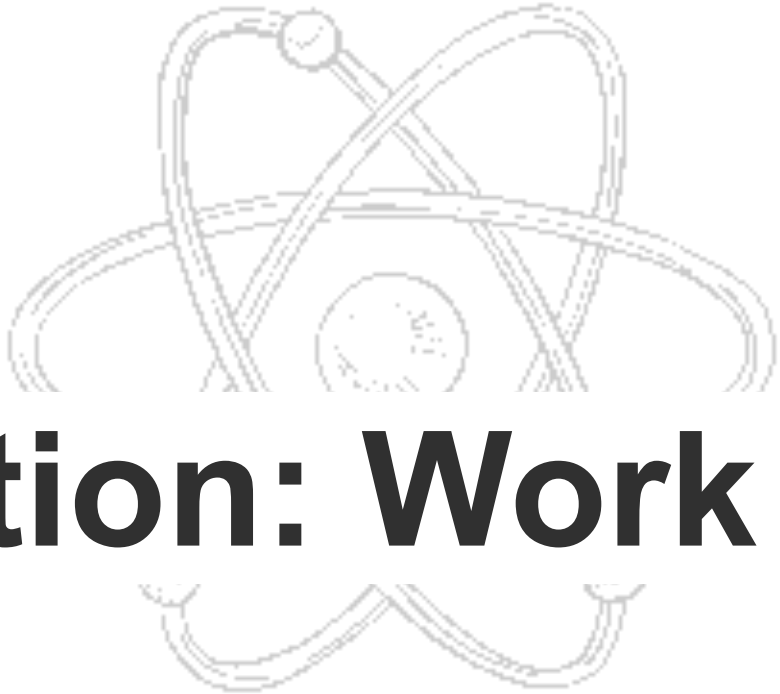


Equation: Density (ρ)

$$density = \frac{mass}{volume} \text{ or } \rho = \frac{m}{V}$$



Equation: Work Done

$E=Fd$ (Force $\times$ distance moved in the direction of the force)

Equation: Power (Energy/Time)

$$Power = \frac{workdone}{time}$$

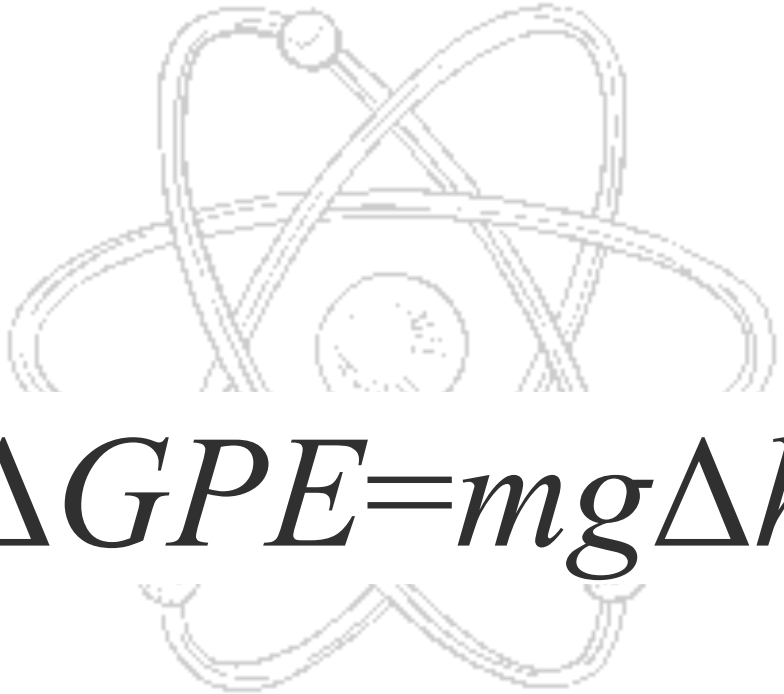
Equation: Efficiency

$$: efficiency = \frac{usefullyenergyoutput}{totalenergyinput}$$

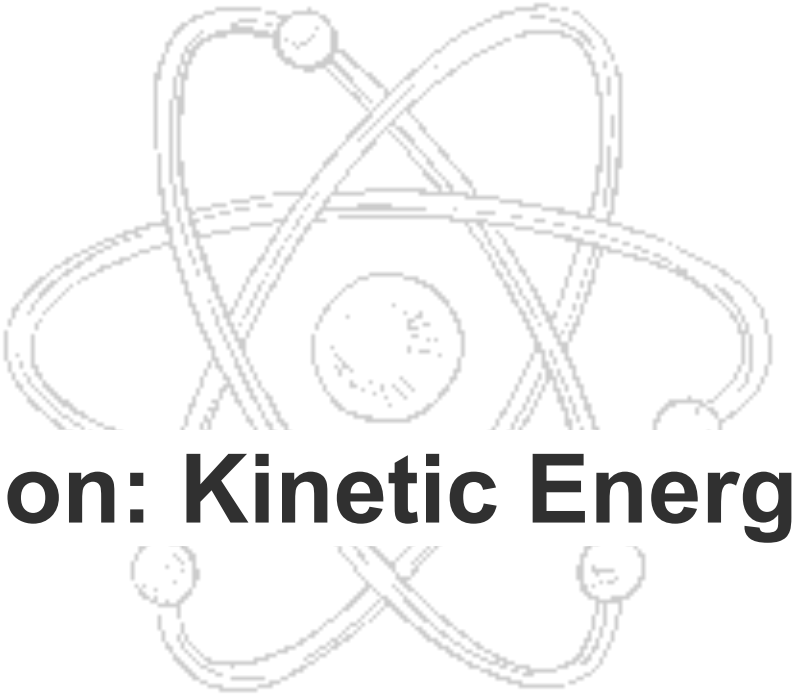
Equation: Voltage (Ohm's Law)

$V=IR$ (Voltage = Current × Resistance)

Equation: Change in Gravitational Potential Energy



$$\Delta GPE = mg\Delta h$$



Equation: Kinetic Energy (KE)

$$KE = \frac{1}{2}mv^2$$

Equation: Charge

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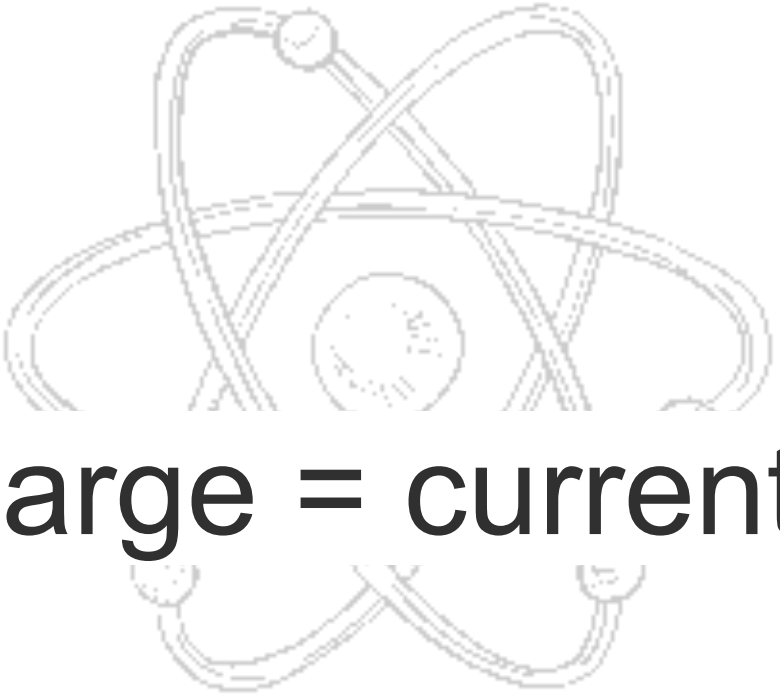

$Q=It$ (charge = current × time)

Equation: Moment of Force

Moment of force = force × perpendicular distance

Equation: Pressure

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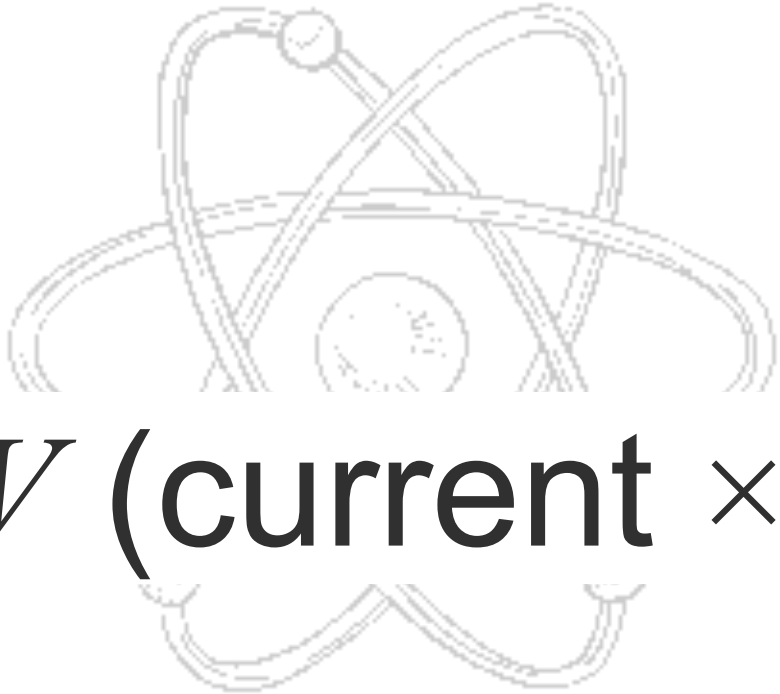
$$P = \frac{F}{A}$$

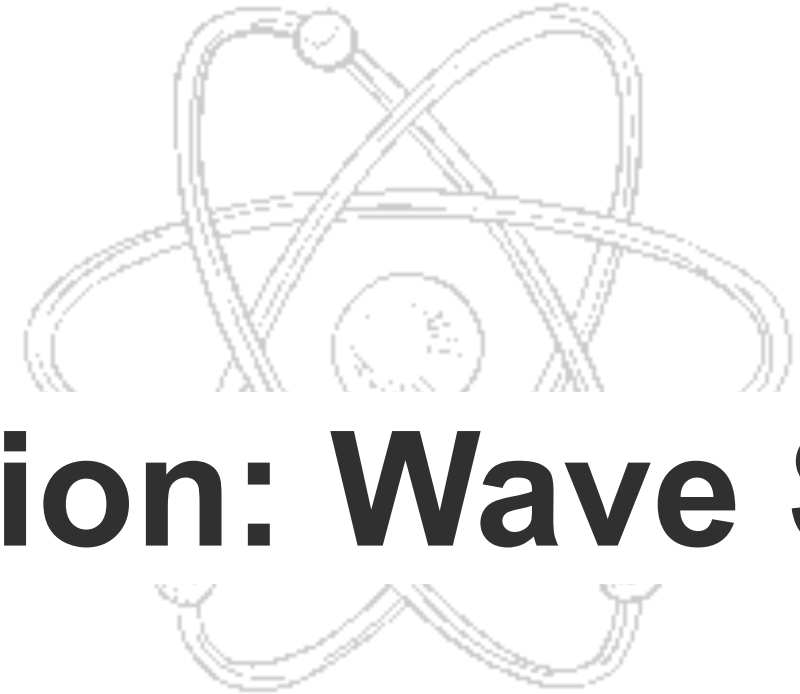
Equation: Electrical Power



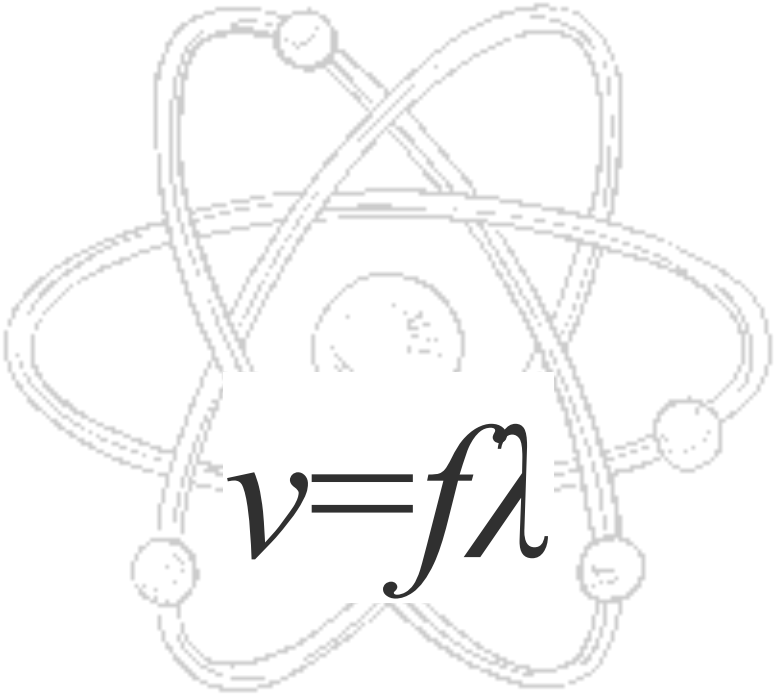
$P=IV$ (current $\times$ pd)

Equation: Acceleration

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



Equation: Wave Speed



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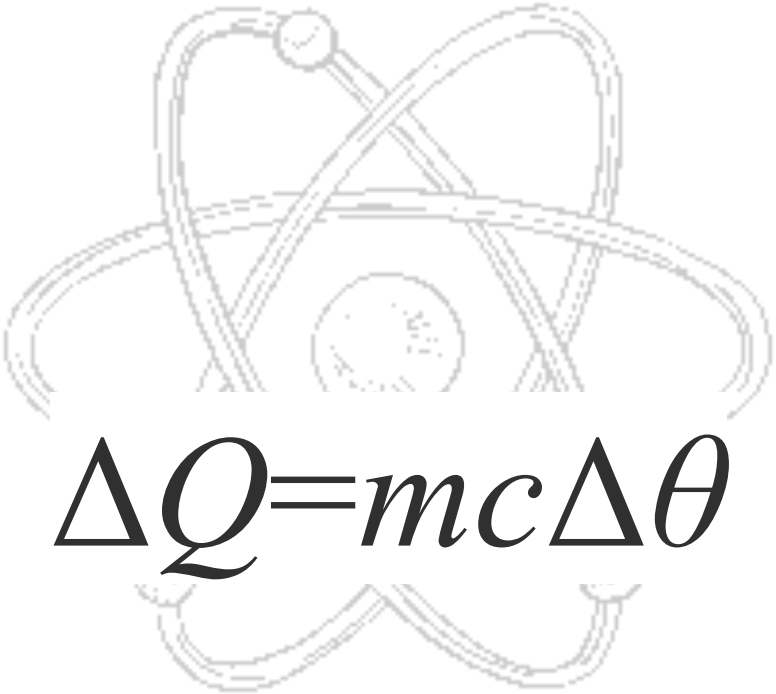
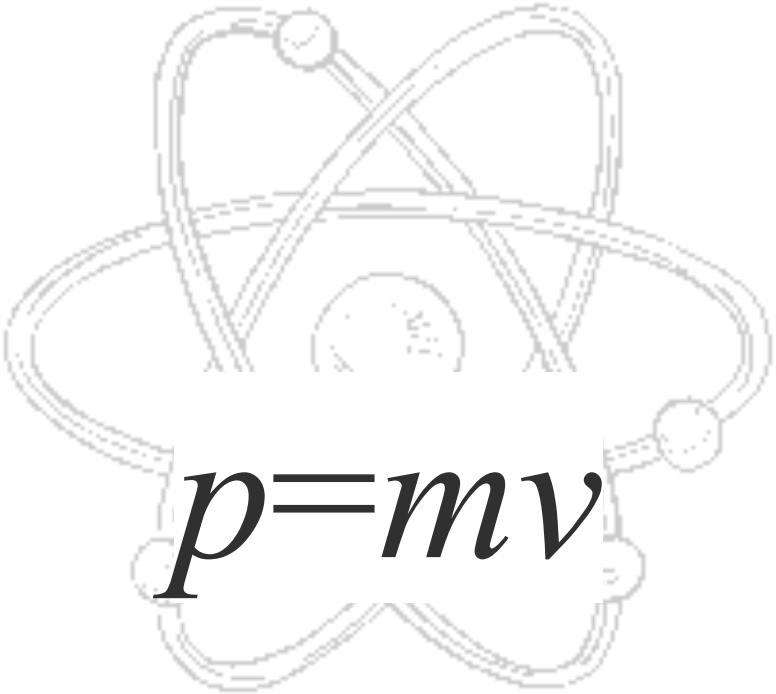
Change in Energy (Specific Heat Capacity)



$$\Delta Q = mc\Delta\theta$$

Higher Tier Equation: Momentum



$$p=mv$$

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