Required formulas for IGCSE Physics (not given)

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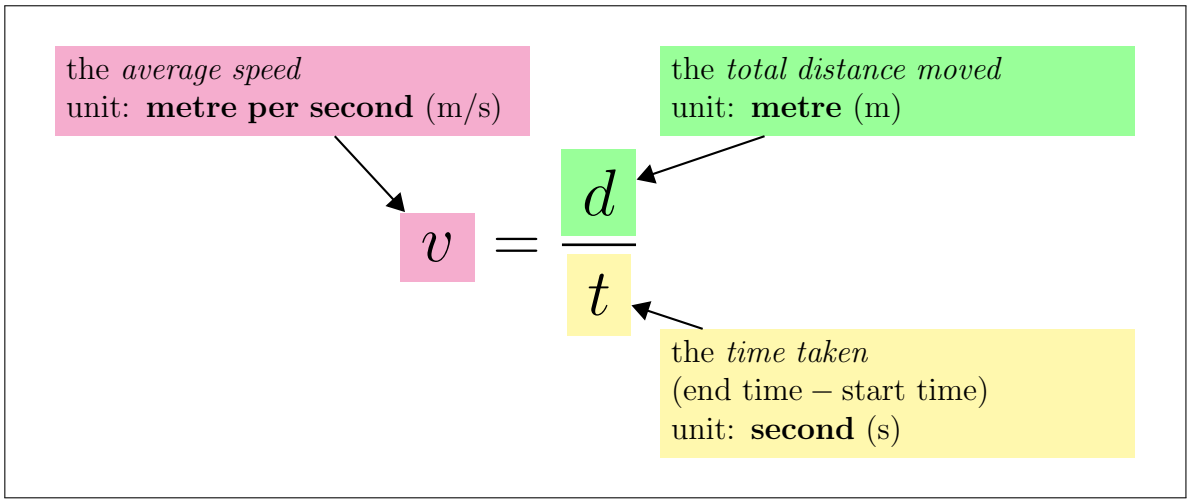
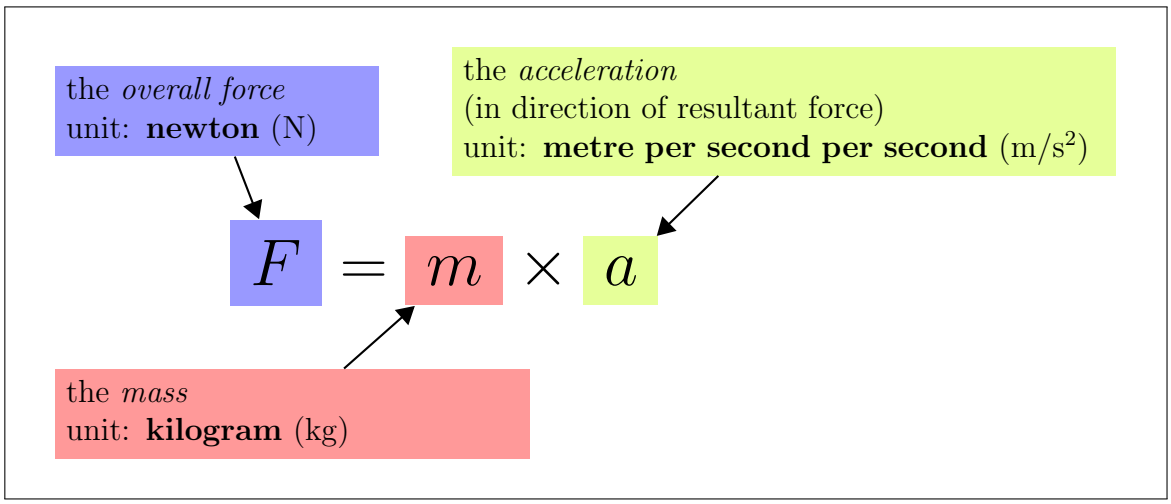
1. the relationship between average speed, distance moved and time taken:

$$\text{average speed} = \frac{\text{distance moved}}{\text{time taken}}$$



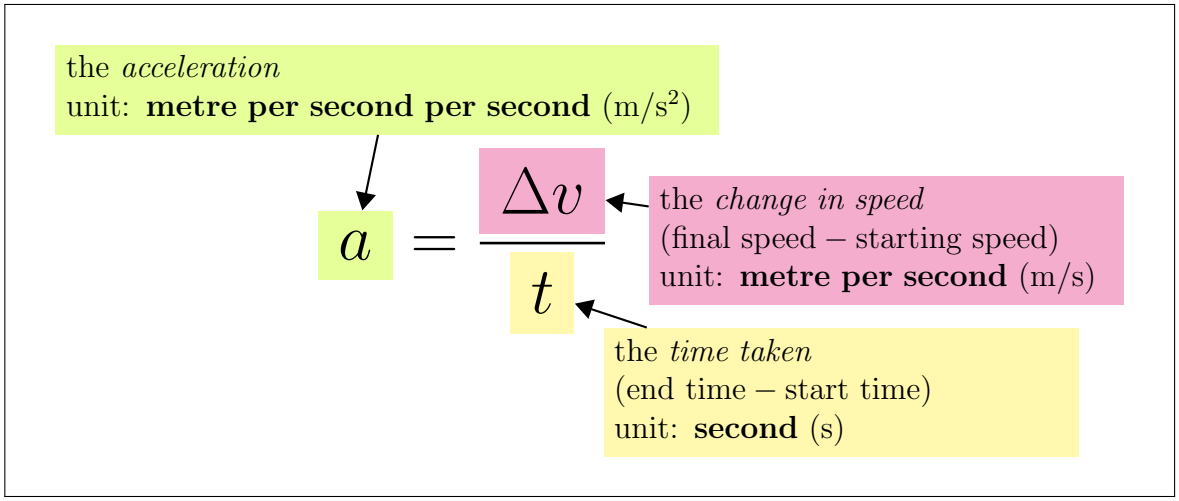
2. the relationship between unbalanced force, mass and acceleration:

$$\text{force} = \text{mass} \times \text{acceleration}$$



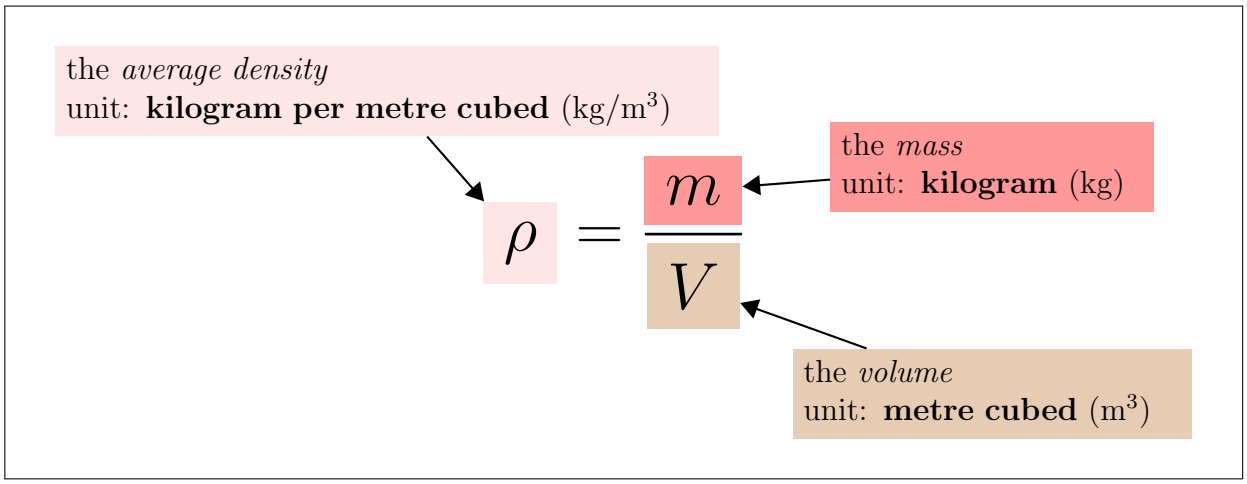
3. the relationship between acceleration, change in velocity and time taken:

$$\text{acceleration} = \frac{\text{change in velocity}}{\text{time}}$$



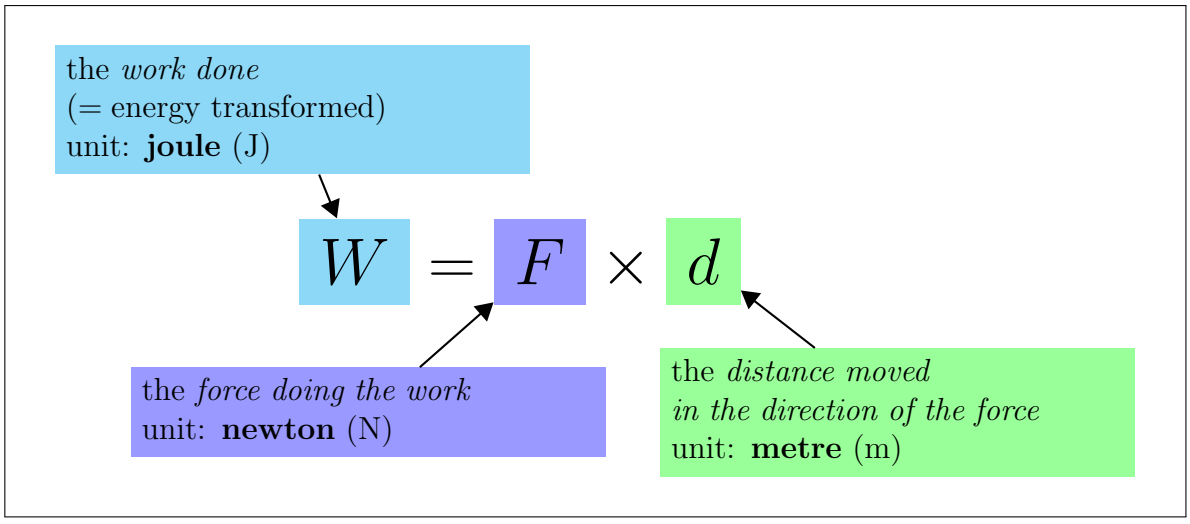
4. the relationship between density, mass and volume:

$$\text{density} = \frac{\text{mass}}{\text{volume}}$$



5. the relationship between work done, force and distance moved:

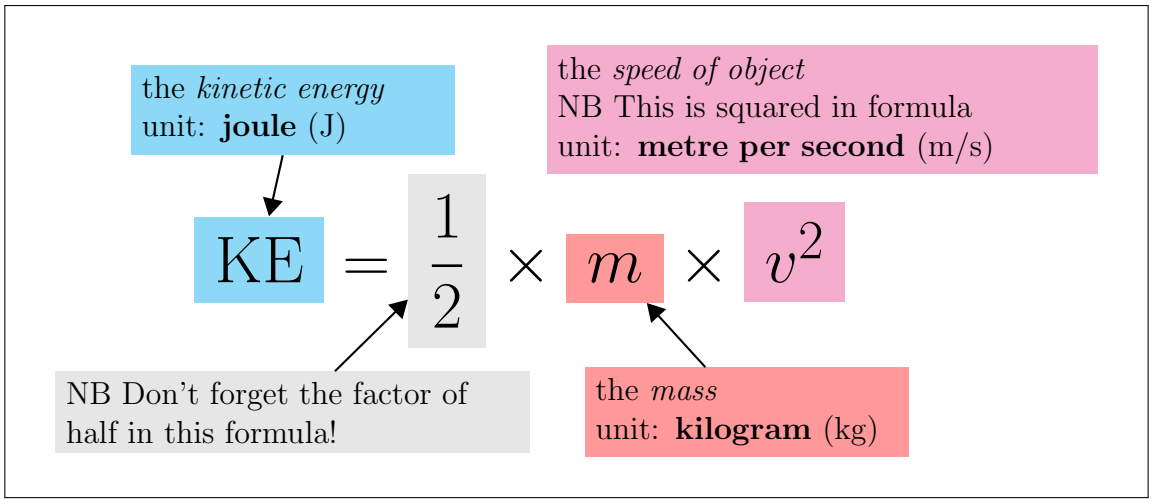
$$\text{work done} = \text{force} \times \text{distance moved}$$



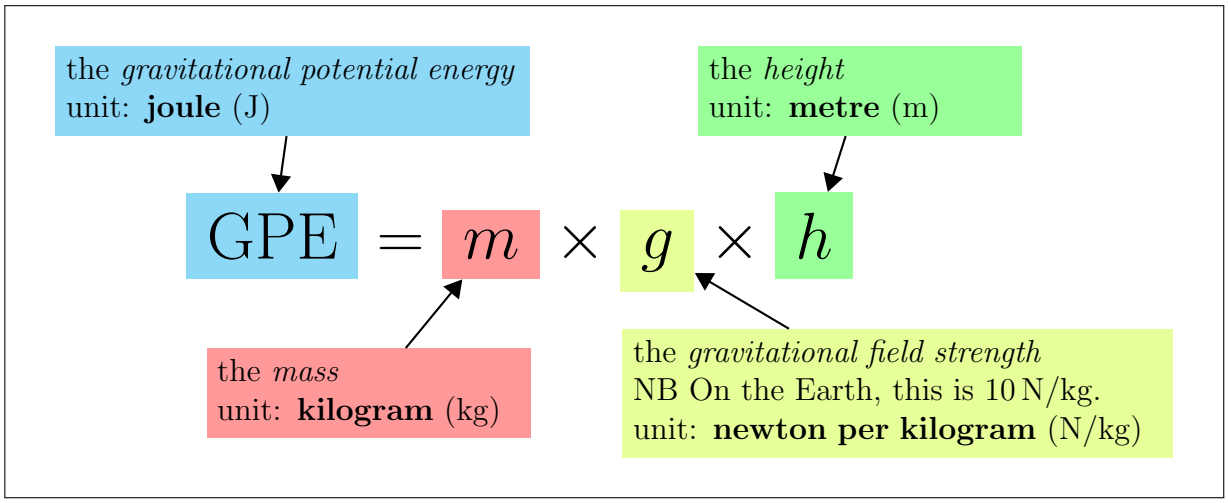
6. the energy relationships:

$$\text{energy transferred} = \text{work done}$$

$$\text{kinetic energy} = \frac{1}{2} \times \text{mass} \times \text{speed}^2$$

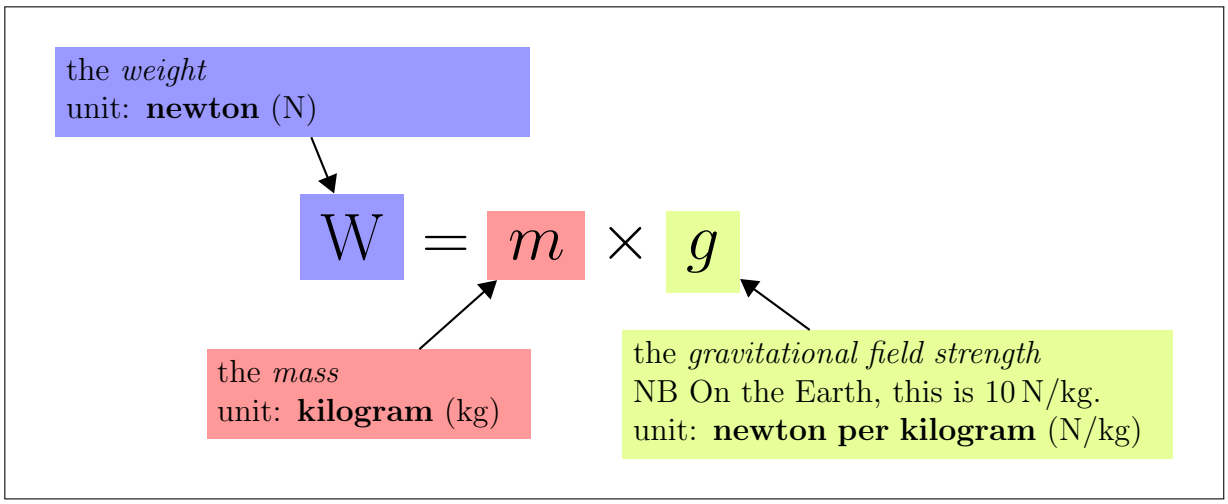


$$\text{gravitational potential energy} = \text{mass} \times g \times \text{height}$$



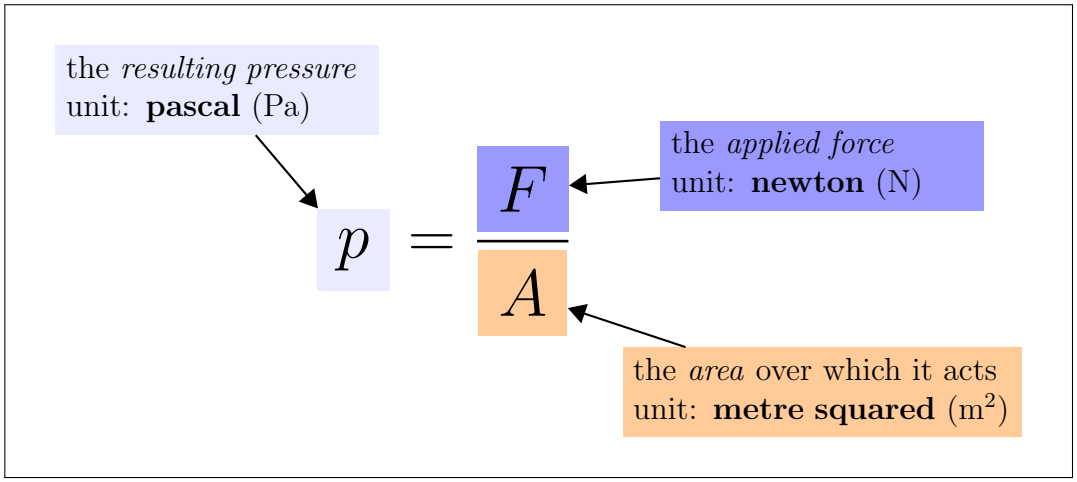
7. the relationship between weight, mass and gravitational field strength:

$$\text{weight} = \text{mass} \times \text{gravitational field strength}$$



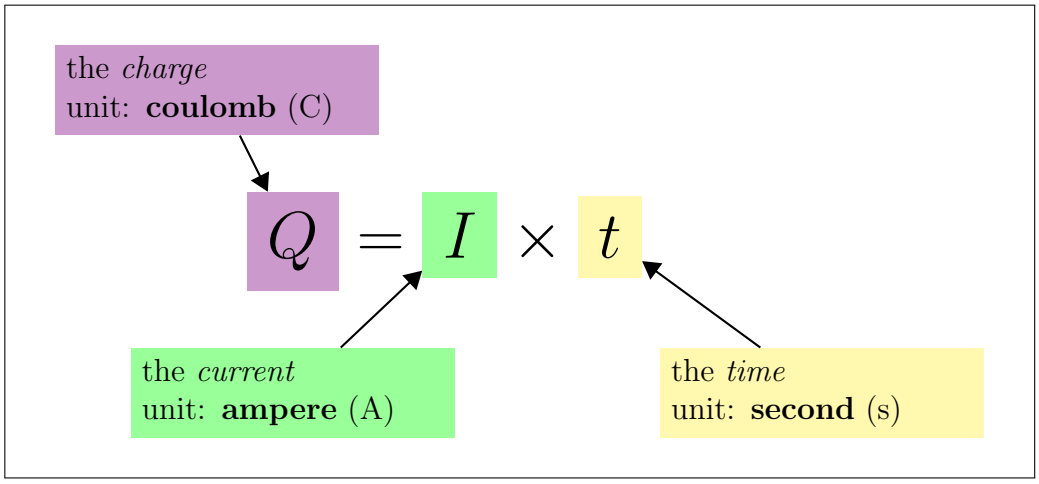
8. the relationship between pressure, force and area:

$$\text{pressure} = \frac{\text{force}}{\text{area}}$$

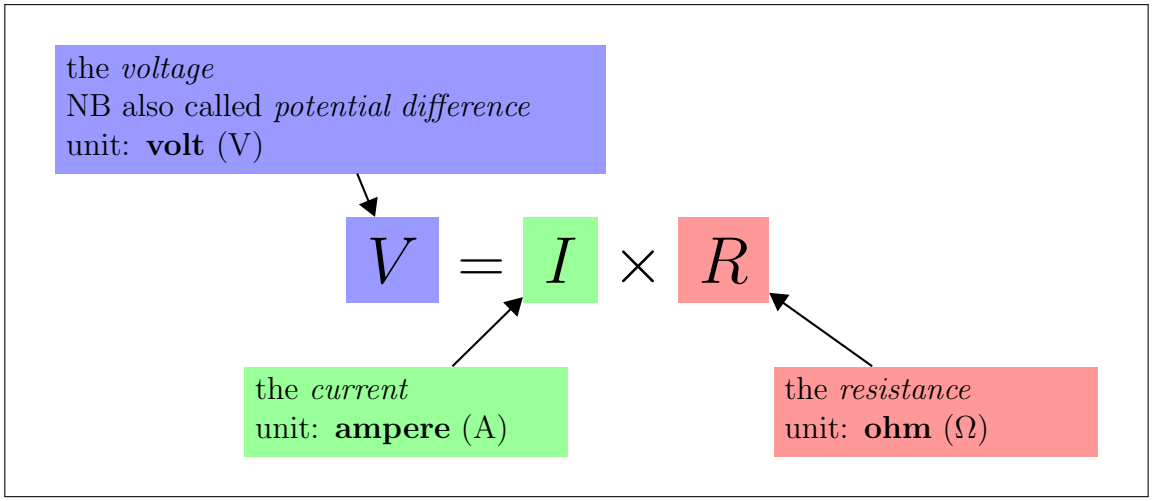


9. the relationship between charge, current, voltage, resistance and electrical power:

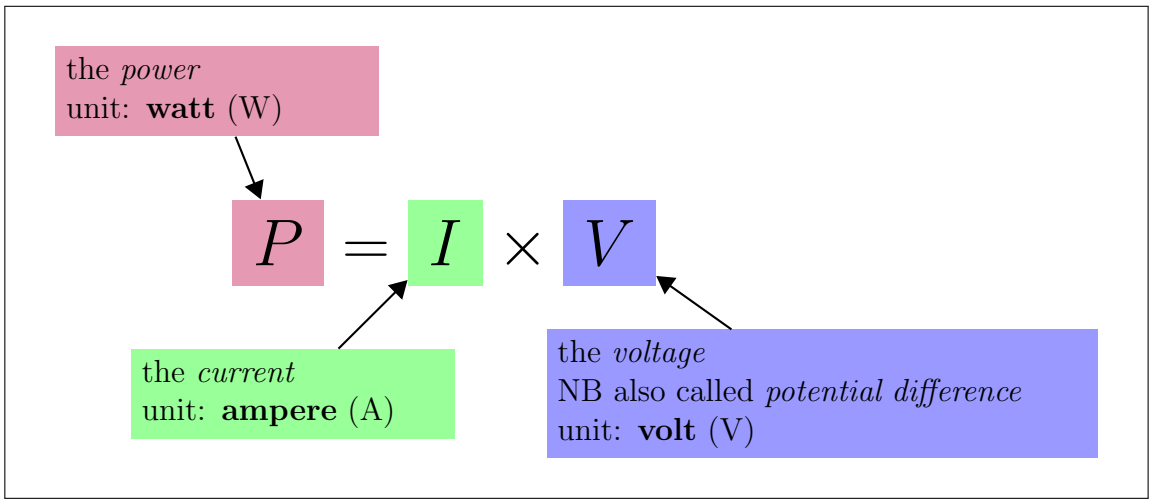
$$\text{charge} = \text{current} \times \text{time}$$



$$\text{voltage} = \text{current} \times \text{resistance}$$

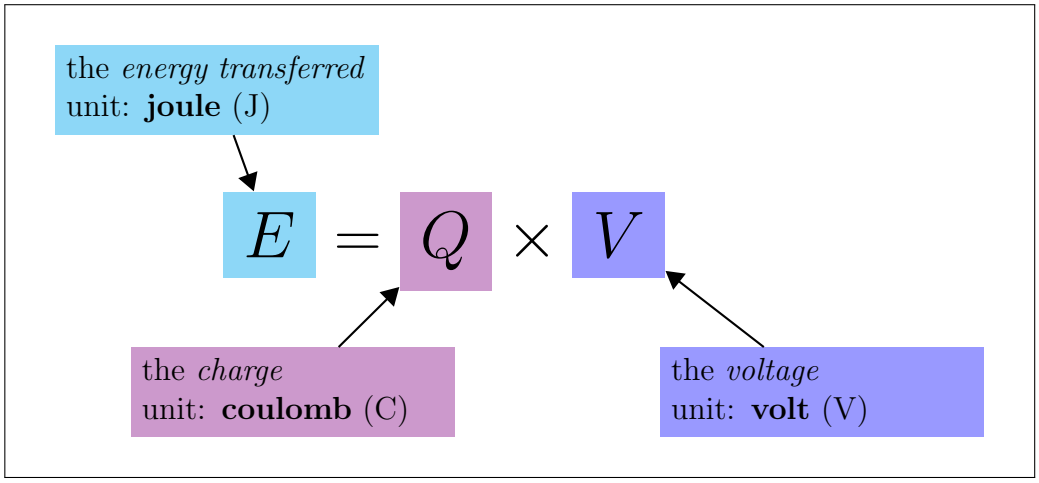


electrical power = voltage × current



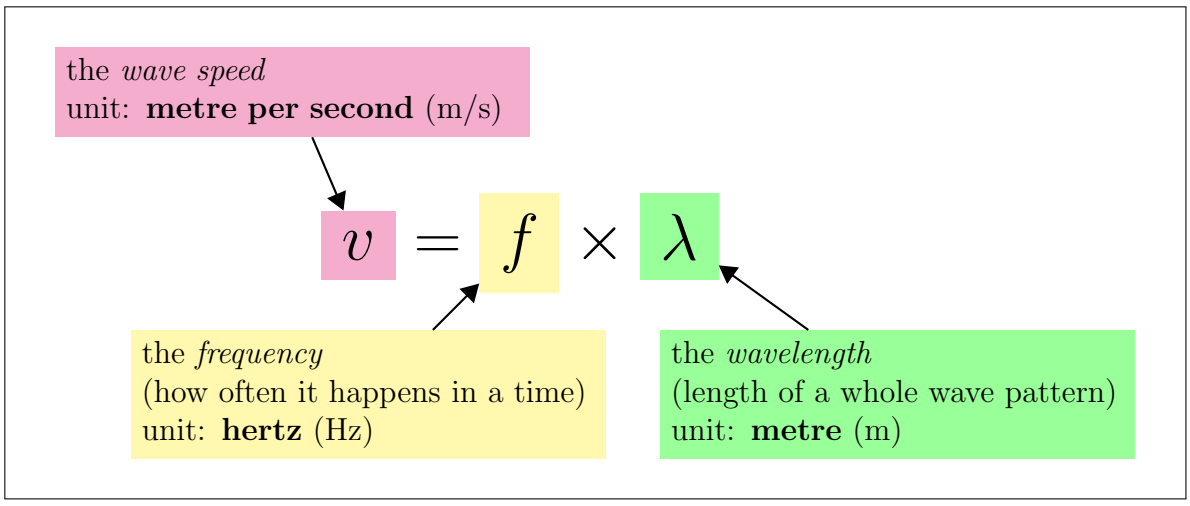
10. the relationship between energy transferred, charge and voltage:

energy transferred = charge × voltage



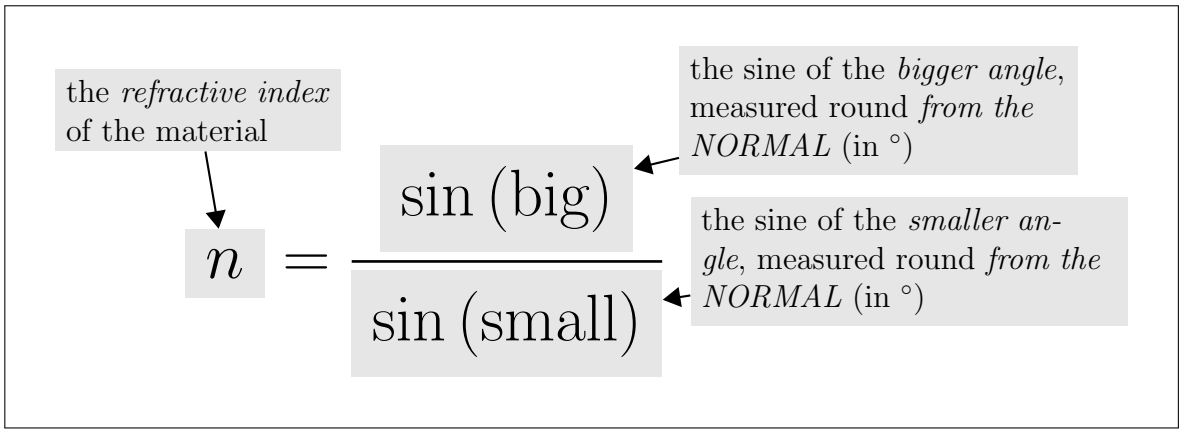
11. the relationship between the speed, frequency and wavelength of a wave:

wave speed = frequency × wavelength



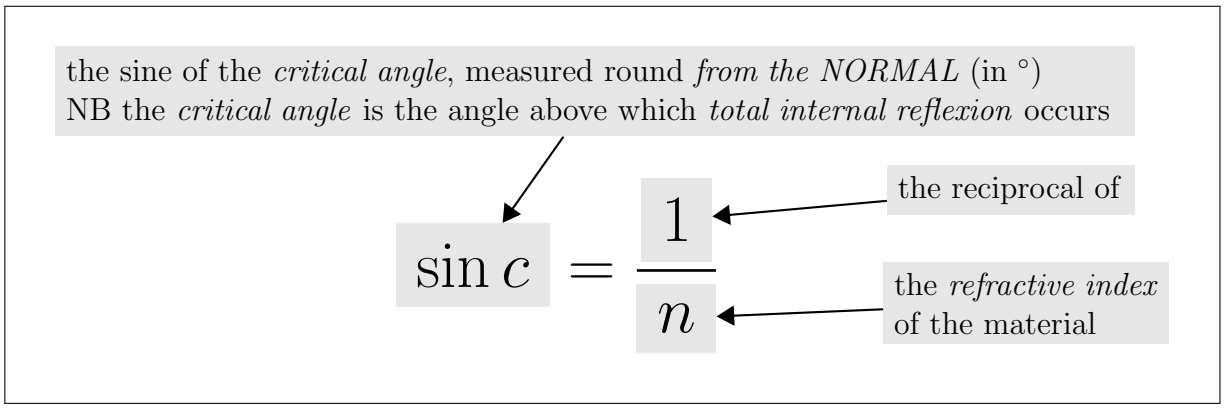
12. the relationship between refractive index, angle of incidence and angle of refraction:

$$n = \frac{\sin i}{\sin r}$$



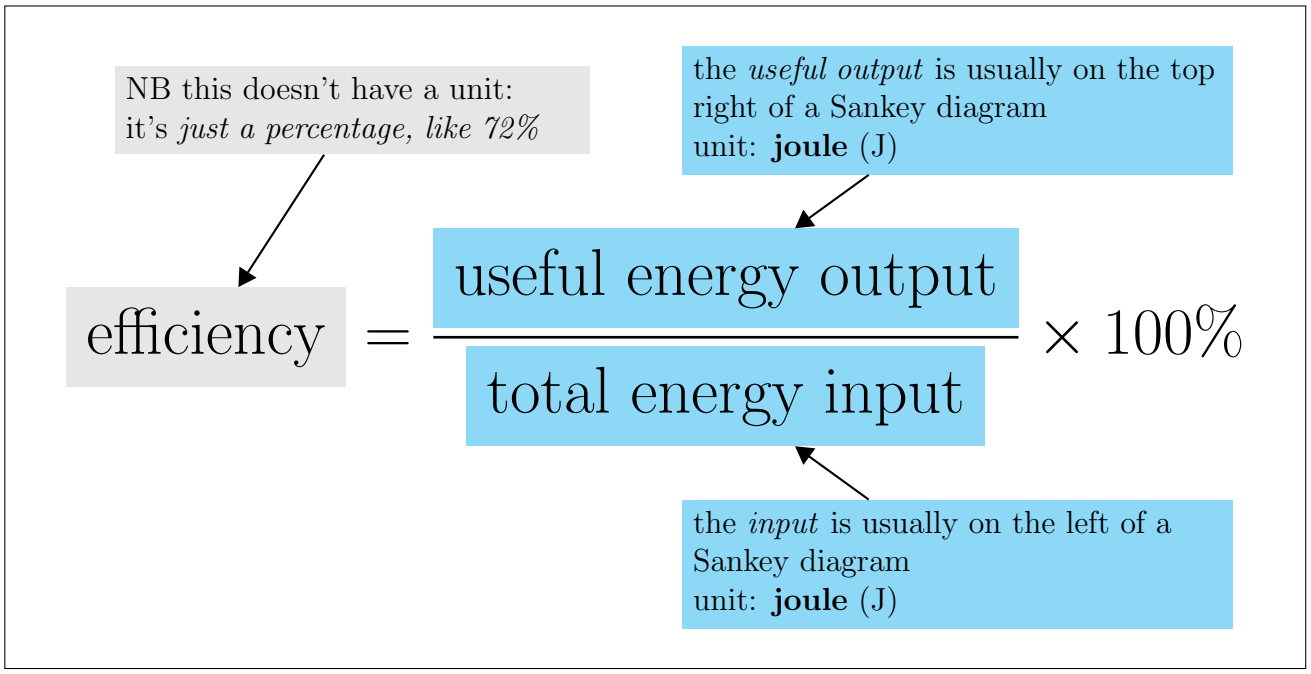
13. the relationship between critical angle and refractive index:

$$\sin c = \frac{1}{n}$$



14. the relationship for efficiency

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



15. the relationship for pressure difference:

$$\text{pressure difference} = \text{height} \times \text{density} \times \text{gravitaional field strength}$$

$$p = h \times \rho \times g$$