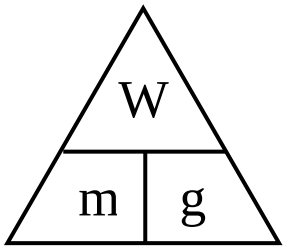
AQA GCSE Physics 9-1 Equation Cards

weight = mass x gravitational field strength

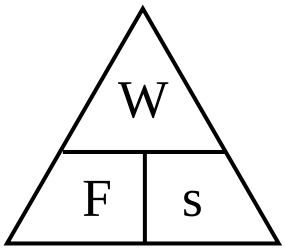
$$W = m\ g$$



P10 Learn for Paper Two

work done = force x distance

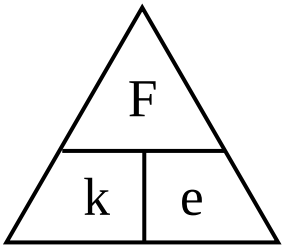
$$W = F\ s$$



P1 Learn for Paper One

force applied to a spring = spring constant x extension

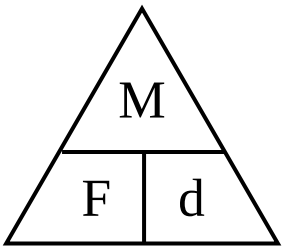
$$F = k\ e$$



P10 Learn for Paper Two

moment of a force = force x distance

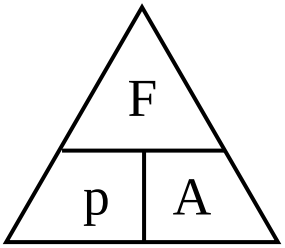
$$M = F\ d$$



P8 Learn for Paper Two

pressure = force / area

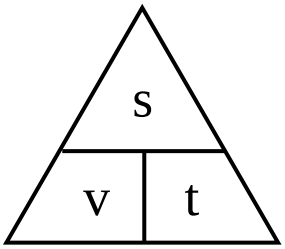
$$p = F/A$$



P11 Learn for Paper Two

distance travelled = speed x time

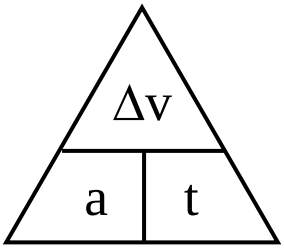
$$s = v\ t$$



P9 Learn for Paper Two

acceleration = change in velocity / time taken

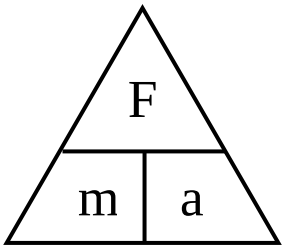
$$a = \Delta v / t$$



P9 Learn for Paper Two

resultant force = mass x acceleration

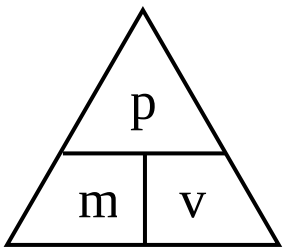
$$F = m\ a$$



P10 Learn for Paper Two

momentum = mass x velocity

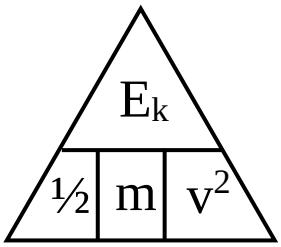
$$p = m\ v$$



P10 Learn for Paper Two

kinetic energy =
0.5 x mass x (speed)^2

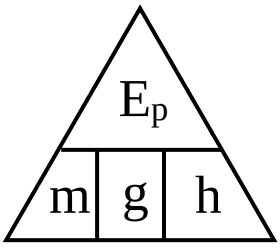
$E_k = \frac{1}{2} m v^2$



P1 Learn for Paper One

gravitational potential energy =
mass x gravitational field strength x height

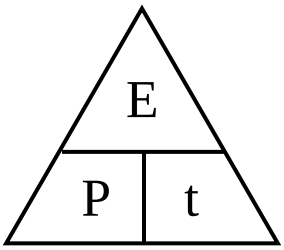
$E_p = m g h$



P1 Learn for Paper One

power =
energy transferred / time

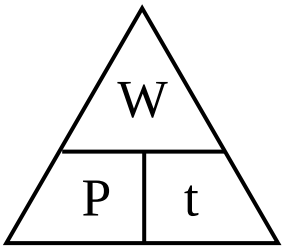
$P = E / t$



P1 Learn for Paper One

power = work done / time

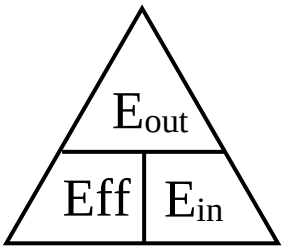
$P = W / t$



P1 Learn for Paper One

efficiency = useful output energy transfer / total input energy transfer

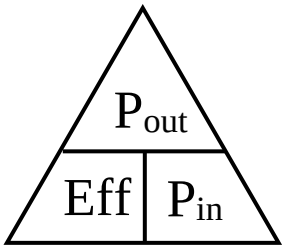
$Eff = E_{out} / E_{in}$



P1 Learn for Paper One

efficiency = useful power output / total power output

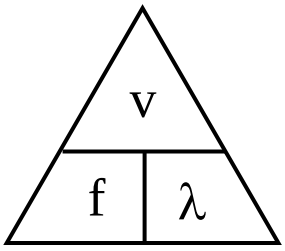
$Eff = P_{out} / P_{in}$



P1 Learn for Paper One

wave speed =
frequency x wavelength

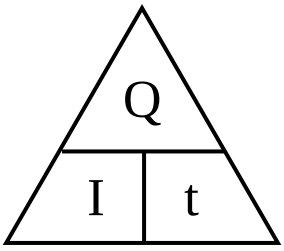
$v = f \lambda$



P13 Learn for Paper Two

charge flow = current x time

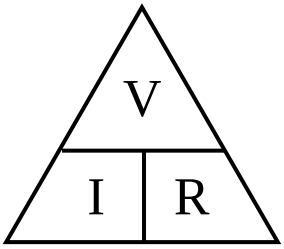
$Q = I t$



P4 Learn for Paper One

potential difference =
current x resistance

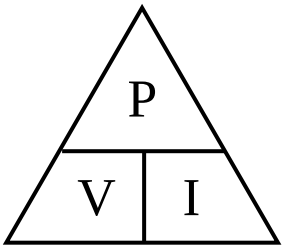
$V = I R$



P4 Learn for Paper One

power = potential difference x current

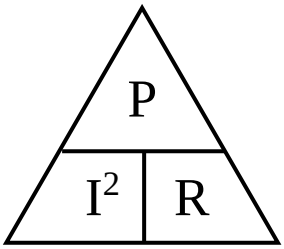
$$P = V\ I$$



P5 Learn for Paper One

power = (current)^2 x resistance

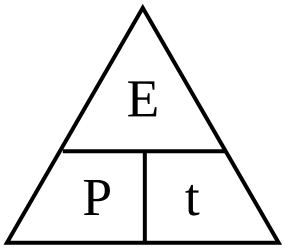
$$P = I^2\ R$$



P5 Learn for Paper One

energy transferred = power x time

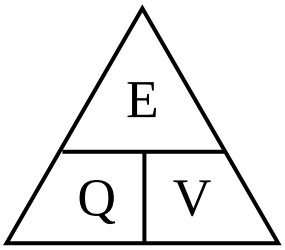
$$E = P\ t$$



P5 Learn for Paper One

energy transferred = charge flow x potential difference

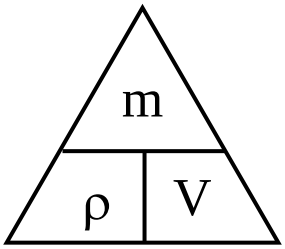
$$E = Q\ V$$



P5 Learn for Paper One

density = mass / volume

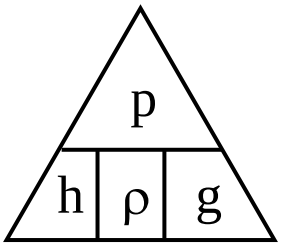
$$\rho = m / V$$



P6 Learn for Paper One

pressure = height x density x gravitational field strength

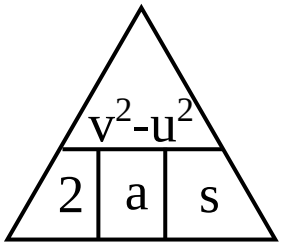
$$p = h\ \rho\ g$$



P11 Paper Two - On Equation Sheet

(final velocity)^2 – (initial velocity)^2 = 2 x acceleration x distance

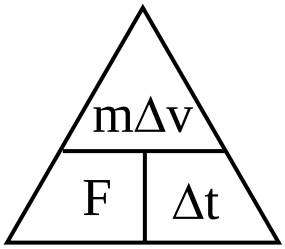
$$v^2 - u^2 = 2\ a\ s$$



P9 Paper Two - On Equation Sheet

force = change in momentum / time taken

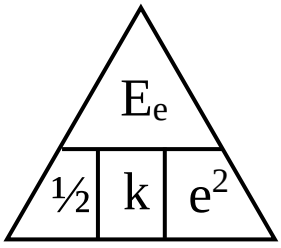
$$F = m\ \Delta v / \Delta t$$



P10 Paper Two - On Equation Sheet

elastic potential energy = 0.5 x spring constant x (extension)^2

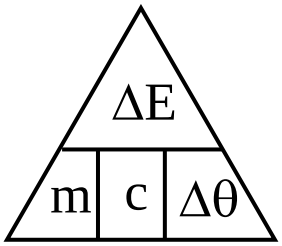
$$E_e = ½\ k\ e^2$$



P1 Paper One - On Equation Sheet

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

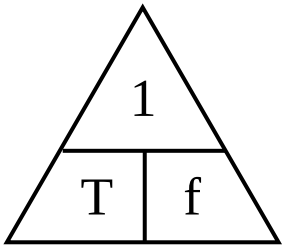
$$\Delta E = m\ c\ \Delta\theta$$



P1 P6 Paper One - On Equation Sheet

period = 1 / frequency

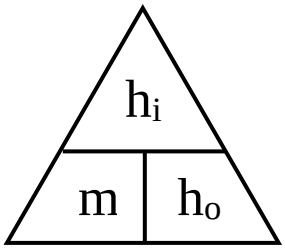
$$T = 1 / f$$



P12 Paper Two - On Equation Sheet

magnification = image height / object height

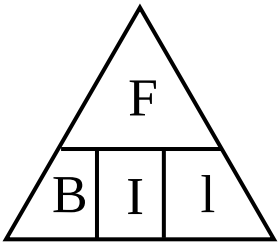
$$m = h_i / h_o$$



P14 Paper Two - On Equation Sheet

force = magnetic flux density x current x length

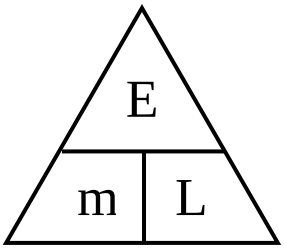
$$F = B\ I\ l$$



P15 Paper Two - On Equation Sheet

energy for hange of state = mass x specific latent heat

$$E = m\ L$$



P6 Paper One - On Equation Sheet

p.d. across primary / p.d. across secondary = turns in primary / turns in secondary

$$V_p / V_s = n_p / n_s$$

this is the same as

$$V_p\ n_s = V_s\ n_p$$

divide through to leave the missing value the subject

P15 Paper Two - On Equation Sheet

primary p.d. x primary current = secondary p.d. x secondary current

$$V_s\ I_s = V_p\ I_p$$

divide through to leave the missing value as the subject

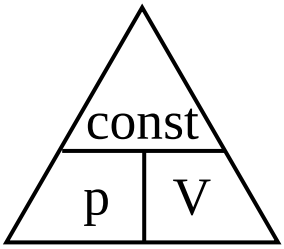
e.g dividing by V_s leaves

$$I_s = V_p\ I_p / V_s$$

P15 Paper Two - On Equation Sheet

pressure x volume = constant

$$pV = \text{constant}$$



P6 Paper One - On Equation Sheet

To use these cards print them out and carefully cut out the cards. On the reverse of each card write the quantities involved in the relationship. You could also include the units. e.g. for the first card you would write:

weight in N
mass in kg
gravity in N/kg

Then repeatedly test your ability to recall the equations when you look at the quantities on the reverse. Practice rearranging the relationships or learn the triangle if you prefer.