AQA GCSE (9-1) PHYSICS Equation sheet

In an exam you will be provided with a Physics Equation Sheet that contains the following equations. You should be able to select and apply the correct equation to answer the question.

1 (H)	pressure due to a column of liquid = height of column× density of liquid × gravitational field strength (g)	$p = h\,\rho\,g$
2	(final velocity)^2 − (initial velocity)^2 = 2 × acceleration × distance	$v^2 - u^2 = 2\,a\,s$
3 (H)	force $\dfrac{\text{change in momentum}}{\text{time taken}}$	$F = \dfrac{m\Delta v}{\Delta t}$
4	elastic potential energy = 0.5 × spring constant × (extension)^2	$E_e = \dfrac{1}{2}\,k\,e^2$
5	change in thermal energy = mass × specific heat capacity × temperature change	$\Delta E = m\,c\,\Delta\theta$
6	period = $\dfrac{1}{\text{frequency}}$	
7	magnification = $\dfrac{\text{image height}}{\text{object height}}$	
8 (H)	force on a conductor (at right angles to a magnetic field) carrying a current = magnetic flux density × current × length	$F = B\,I\,l$
9	thermal energy for a change of state = mass × specific latent heat	$E = m\,L$
10 (H)	$\dfrac{\text{potential difference across primary coil}}{\text{potential difference across secondary coil}} = \dfrac{\text{number of turns in primary coil}}{\text{number of turns in secondary coil}}$	$\dfrac{V_p}{V_s} = \dfrac{n_p}{n_s}$
11 (H)	potential different across primary coil × current in primary coil = potential difference across secondary coil × current in secondary coil	$V_s\,I_s = V_p\,I_p$
12	For gases: pressure × volume = constant	$p\,V = \text{constant}$

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You need to be able to recall these 23 equations if asked in your exam.

1	weight = mass × gravitational field strength (g)	$W = m\,g$
2	work done = force × distance (along the line of action of the force)	$W = F\,s$
3	force applied to a spring = spring constant × extension	$F = k\,e$
4	moment of a force = force × distance (normal to direction of force)	$M = F\,d$
5	pressure = $\dfrac{\text{force normal to a surface}}{\text{area of that surface}}$	$p = \dfrac{F}{A}$
6	distance travelled = speed × time	$\mathbf{s = v\,t}$
7	acceleration = $\dfrac{\text{change in velocity}}{\text{time taken}}$	$a = \dfrac{\Delta v}{t}$
8	resultant force = mass × acceleration	$F = m\,a$
9 Ⓗ	momentum = mass × velocity	$p = m\,v$
10	kinetic energy = 0.5 × mass × (speed)^2	$E_k = \dfrac{1}{2}m\,v^2$
11	gravitational potential energy = mass × gravitational field strength (g) × height	$E_p = m\,g\,h$
12	power = $\dfrac{\text{energy transferred}}{\text{time}}$	$P = \dfrac{E}{t}$
13	power = $\dfrac{\text{work done}}{\text{time}}$	$P = \dfrac{W}{t}$
14	efficiency = $\dfrac{\text{useful output energy transfer}}{\text{total input energy transfer}}$	
15	efficiency = $\dfrac{\text{useful power output}}{\text{total power input}}$	
16	wave speed = frequency × wavelength	$v = f\,\lambda$
17	charge flow = current × time	$Q = I\,t$
18	potential difference = current × resistance	$V = I\,R$
19	power = potential difference × current	$P = V\,I$
20	power = (current)^2 × resistance	$P = I^2\,R$

21	energy transferred = power × time	$E = P\,t$
22	energy transferred = charge flow × potential difference	$E = Q\,V$
23	density = $\dfrac{\text{mass}}{\text{volume}}$	$P = \dfrac{m}{V}$