Physics Equations Revision

Complete the following table. The first row has been done for you. If you need help with rearranging equations, check out the video → https://www.youtube.com/watch?v=BpLHHTY_umM

equation	complete word equation with units	rearrange equation	
$W = mg$	$weight(N) = mass(kg) \times gravitational\ field\ strength\ (N/kg)$	$m = \frac{W}{g}$	$g = \frac{W}{m}$
$W = Fs$		$F =$	$s =$
$F = ke$		$k =$	$e =$
$s = vt$		$v =$	$t =$
$a = \frac{\Delta v}{t}$		$t =$	$\Delta v =$
$F = ma$		$m =$	$a =$
* $p = mv$		$m =$	$v =$
$E_k = \frac{1}{2}mv^2$		$m =$	$v =$
$E_p = mgh$		$m =$	$h =$
$P = \frac{E}{t}$		$E =$	$t =$
$P = \frac{W}{t}$		$W =$	$t =$
$eff = \frac{E_{output}}{E_{total}}$	$efficiency = \frac{useful\ energy\ (or\ power)\ output}{total\ energy\ (or\ power)\ input}$	$E_{output} =$	$E_{total} =$
$v = f\lambda$		$f =$	$\lambda =$
$Q = It$		$I =$	$t =$
$V = IR$		$I =$	$R =$
$P = IV$		$I =$	$V =$
$P = I^2R$		$I =$	$R =$
$E = Pt$		$P =$	$t =$
$E = QV$		$Q =$	$V =$
$\rho = \frac{m}{V}$		$m =$	$V =$

* higher tier only

Crib sheet

Symbol	Quantity
W	$weight(N)$
m	$mass(kg)$
g	$gravitational\ field\ strength(N/kg)$
F	$force(N)$
k	$spring\ constant(N/m)$
s	$distance(m)$
v	$speed\ or\ velocity\ (m/s)$
a	$acceleration(m/s^2)$
t	$time(s)$
p	$momentum(kgm/s)$
E_k	$kinetic\ energy(J)$
E_p	$gravitational\ potential\ energy(J)$
h	$height(m)$
P	$power(W)$
E	$energy(J)$
W	$work\ done(J)$
f	$frequency(Hz)$
λ	$wavelength(m)$
Q	$charge(C)$
I	$current(A)$
V	$voltage\ or\ potential\ difference(V)$
R	$resistance(\Omega)$
ρ	$density(kg/m^3)$
V	$volume(m^3)$

Note: Some symbols are used for more than one quantity (e.g. W for weight and work done). The prefix Δ means "change of" (e.g. $\Delta v\ means\ change\ of\ velocity$).

unit symbol	unit name
N	$newton$
kg	$kilogram$
m	$metre$
s	$second$
J	$joule$
W	$watt$
Hz	$hertz$
C	$coulomb$
A	$ampere$
Ω	ohm
V	$volt$

Additional equations supplied in exam

equation	word equation	rearrange equation	
$v^2 - u^2 = 2as$	$final\ speed^2 - start\ speed^2 = 2 \times acceleration \times distance$	$a =$	$v =$
$E_e = \frac{1}{2}ke^2$	$elastic\ potential\ energy = \frac{1}{2} \times spring\ constant \times extension^2$	$k =$	$e =$
$\Delta E = mc\Delta\theta$	$energy\ supplied = mass \times specific\ heat\ capacity \times change\ in\ temperature$	$c =$	$\Delta\theta =$
$*\ F = BIl$	$force = magnetic\ flux\ density \times current \times length\ of\ wire\ in\ field$	$B =$	$l =$
$\Delta E = ml$	$energy\ supplied = mass \times specific\ latent\ heat$	$m =$	$l =$
$*\ V_s I_s = V_p I_p$	$potential\ difference\ across\ secondary \times current\ through\ secondary = potential\ difference\ across\ primary \times current\ through\ primary$	$V_p =$	$I_s =$

* higher tier