MOTION

$v_f = v_i + a\Delta t$	$\Delta x = v_i \Delta t + \frac{1}{2} a \Delta t^2$ or $\Delta y = v_i \Delta t + \frac{1}{2} a \Delta t^2$
$v_f^2 = v_i^2 + 2a\Delta x$ or $v_f^2 = v_i^2 + 2a\Delta y$	$\Delta x = \left(\frac{v_i + v_f}{2}\right) \Delta t$ or $\Delta x = \left(\frac{v_i + v_f}{2}\right) \Delta t$

FORCE

$F_{net} = ma$	$p = mv$
$f_s^{max} = \mu_s N$	$f_k = \mu_k N$
$F_{net} \Delta t = \Delta p$	
$\Delta p = m v_f - m v_i$	$w = mg$
$F = G \frac{m_1 m_2}{d^2}$ or $F = \frac{G m \cdot m^2}{r^2}$	$g = G \frac{M}{d^2}$ or $g = G \frac{M}{r^2}$

WORK, ENERGY AND POWER

$W = F \Delta x \cos\theta$	$U = mgh$ or $E_p = mgh$
$K = \frac{1}{2} mv^2$ or $E_k = \frac{1}{2} mv^2$	$W_{net} = \Delta K$ or $W_{net} = \Delta E_k$ $\Delta K = K_f - K_i$ or $\Delta E_k = E_{kf} - E_{ki}$
$W_{nc} = \Delta K + \Delta U$ or $W_{nc} = \Delta E_k + \Delta E_p$	$P = \frac{w}{\Delta t}$
$P_{ave} = F v_{ave}$	

WAVES, SOUND AND LIGHT

$v = f\lambda$	$T = \frac{1}{f}$
$f_L = \frac{v \pm v_L}{v \pm v_s} f_L = \frac{v \pm v_L}{v \pm v_b} f_b$	$E = hf$ or $E = \frac{hc}{\lambda}$
$E = W_0 + E_{k(max)}$ or $E = W_0 + K_{max}$ where $E = hf$ and $W_0 = hf_0$ and $E_{k(max)} = \frac{1}{2} mv_{max}^2$ or $K_{max} = \frac{1}{2} mv_{max}^2$	

ELECTROSTATICS

$F = \frac{k Q_1 Q_2}{r^2}$	$E = \frac{k Q}{r^2}$
$V = \frac{W}{q}$	$E = \frac{F}{q}$
$n = \frac{Q}{e}$ or $n = \frac{Q}{q_e}$	

ELECTRIC CIRCUITS

$R = \frac{V}{I}$	$emf(\varepsilon) = I(R + r)$
$R_s = R_1 + R_2 + \ldots$ $\frac{1}{R_p} = \frac{1}{R_1} + \frac{1}{R_2} + \ldots$	$q = I \Delta t$
$W = Vq$	$P = \frac{W}{\Delta t}$
$W = VI\Delta t$	$P = VI$
$W = I^2 R \Delta t$	$P = I^2 R$
$W = \frac{V^2 \Delta t}{R}$	$P = \frac{V^2}{R}$

ALTERNATING CURRENT

$I_{rms} = \frac{I_{max}}{\sqrt{2}}$	$P_{ave} = V_{rms} I_{rms}$
$V_{rms} = \frac{V_{max}}{\sqrt{2}}$	$P_{ave} = I_{rms}^2 R$
	$P_{ave} = \frac{V_{rms}^2}{R}$

PHYSICS DATA SHEET 1 FORMULAE