

Example of a Formulae Sheet

$V = IZ$ $I = \frac{V}{Z}$	$X_C = \frac{1}{2\pi fC}$ $X_L = 2\pi \times fL$	$P = VI \cos \theta$ $P = I^2 R$ $P_{\Delta} = 3P_{\text{star}}$
<p><i>Star</i> : $I_L = I_{ph}$</p> $V_p = \frac{V_L}{\sqrt{3}}$	$Z^2 = R^2 + (X_L - X_C)^2$ $I_T = \sqrt{(I_R^2 + (I_L - I_C)^2)}$ $V_T = \sqrt{(V_R^2 + (V_L - V_C)^2)}$	$pf = \cos \phi = \frac{P}{S}$ $P = \sqrt{3} \times V_L \times I_L \times \cos \theta$ $P = 3V_{ph} I_{ph} \cos \phi$
<p><i>Delta</i> : $V_L = V_{ph}$</p> $I_p = \frac{I_l}{\sqrt{3}}$	$Q = \frac{V^2}{X_C}$ $Z = R \pm jX$	$S = \sqrt{P^2 + Q^2} \quad S = \sqrt{3} \times V_L I_L$ $S = VI$
$\%Z = \frac{S_{\text{rating}}}{S_{\text{fault}}} \times 100$	$\% \eta = \frac{nS \cos \phi}{nS \cos \phi + n^2 P_{Cu} + P_{Fe}} \times 100$	$\frac{N_1}{N_2} = \frac{V_1}{V_2} = \frac{I_2}{I_1}$
$P_{\text{out}} = \frac{2 \times \pi \times T \times N}{60}$	$N_s = \frac{120f}{p}$	$\% \text{Slip} = \frac{N_s - N_r}{N_s} \times 100$
$\eta = \frac{P_{\text{out}}}{P_{\text{in}}} \times 100\%$	$\omega = \frac{2\pi N}{60}$	$\text{Slip} = N_s - N_r$
$\tan \phi = \frac{\text{opp}}{\text{adj}}$	$\sin \phi = \frac{\text{opp}}{\text{hyp}}$	$\cos \phi = \frac{\text{adj}}{\text{hyp}}$
<p><i>Series Connected</i> : $\frac{1}{C_T} = \frac{1}{C_1} + \frac{1}{C_2}$</p> <p><i>Parallel Connected</i> : $C_T = C_1 + C_2$</p>	$Q = CV$	