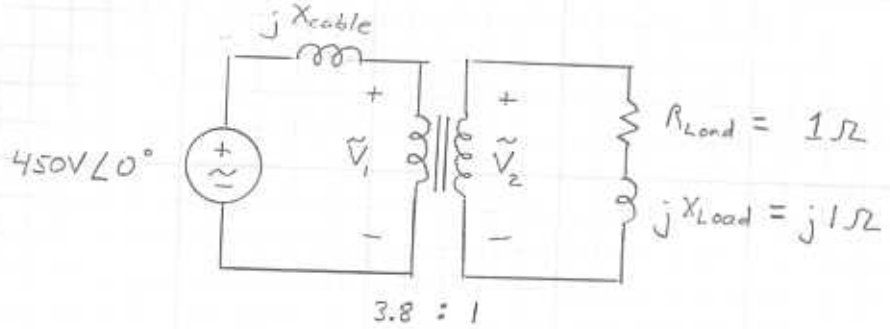
33.1 Given the following circuit with an ideal transformer



(a) If $X_{cable} = 0\Omega$, Find $|\tilde{V}_2|$ and P_{Load}

(b) If $X_{cable} = 2\Omega$, Find $|\tilde{V}_2|$ and P_{Load}

(c) If you want $|\tilde{V}_2| = 115V$, determine the required X_{cable}

33.2 Replace the ideal transformer above by a non-ideal transformer with the same turns ratio but with $r_1 = 1\Omega$, $r_2' = 0.5\Omega$, $X_{\ell 1} = X_{\ell 2}' = 1.5\Omega$, $X_{m1} = \infty\Omega$ and $R_{c1} = \infty\Omega$. If $X_{cable} = 0$, find the following

(a) $\tilde{I}_1$

(b) $\tilde{I}_2$ and $\tilde{V}_2$

(c) P_{Load} and the losses in the transformer