32. (a) We use $P = \mathcal{E}^2/R_{\text{eq}}$, where

$$R_{\text{eq}} = 7.00\,\Omega + \frac{(12.0\,\Omega)(4.00\,\Omega)R}{(12.0\,\Omega)(4.0\,\Omega) + (12.0\,\Omega)R + (4.00\,\Omega)R} \ .$$

Put $P = 60.0\,\text{W}$ and $\mathcal{E} = 24.0\,\text{V}$ and solve for R: $R = 19.5\,\Omega$.

(b) Since $P \propto R_{\text{eq}}$, we must minimize R_{eq}, which means $R = 0$.

(c) Now we must maximize R_{eq}, or set $R = \infty$.

(d) Since $R_{\text{eq, max}} = 7.00\,\Omega + (12.0\,\Omega)(4.00\,\Omega)/(12.0\,\Omega + 4.00\,\Omega) = 10.0\,\Omega$, $P_{\text{min}} = \mathcal{E}^2/R_{\text{eq, max}} = (24.0\,\text{V})^2/10.0\,\Omega = 57.6\,\text{W}$. Since $R_{\text{eq, min}} = 7.00\,\Omega$, $P_{\text{max}} = \mathcal{E}^2/R_{\text{eq, min}} = (24.0\,\text{V})^2/7.00\,\Omega = 82.3\,\text{W}$.