P #39 Ch 18 - pg 581

a) $P_1 = 3000\ W$
$V_1 = 240\ V$

Find I_1: $P_1 = I_1 V_1$
$3000\ W = I_1 \cdot (240\ V)$

$I_1 = 12.5\ A$

Find R_1: $V_1 = I_1 R_1$
$240\ V = (12.5\ A) \cdot R_1$

$R_1 = 19.2\ \Omega$

Find I_2: $V_2 = 120\ V$

$V_2 = I_2 R$
$(120\ V) = I_2 \cdot (19.2\ \Omega)$

$\boxed{I_2 = 6.25\ A}$

b) $P_2 = I_2 V_2$

$= (6.25\ A)(120\ V)$

$\boxed{P_2 = 750\ W}$