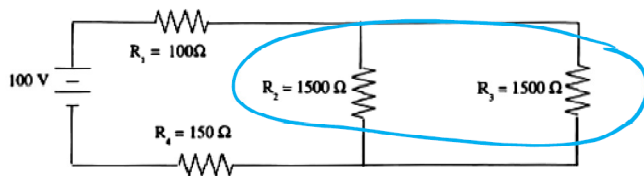
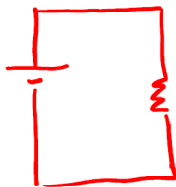
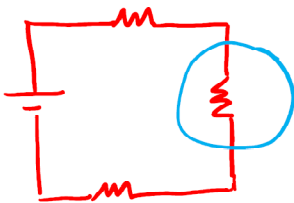


### 6.5 Combination Circuits

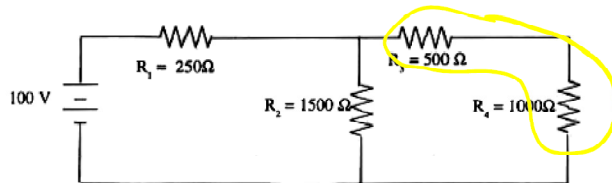
1.



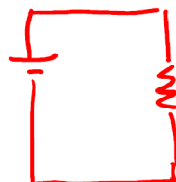
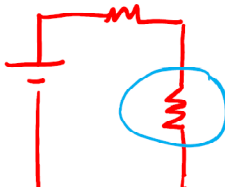
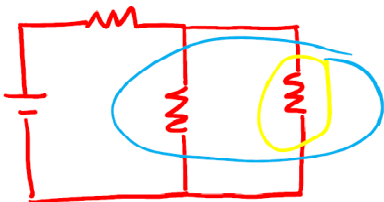
$V_{\text{Total}} = 100V$	$V_1 = 10V$	$V_2 = 75V$	$V_3 = 75V$	$V_4 = 15V$
$I_0 = 0.1A$	$I_1 = 0.1A$	$I_2 = 0.05A$	$I_3 = 0.05A$	$I_4 = 0.1A$
$R_{\text{Total}} = 1000\Omega$	$R_1 = 100\Omega$	$R_2 = 1500\Omega$	$R_3 = 1500\Omega$	$R_4 = 150\Omega$



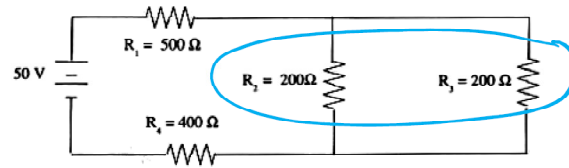
2.



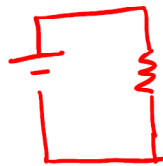
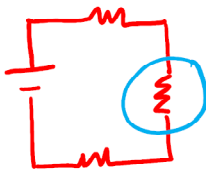
$V_{\text{Total}} = 100V$	$V_1 = 25V$	$V_2 = 75V$	$V_3 = 25V$	$V_4 = 50V$
$I_0 = 0.1A$	$I_1 = 0.1A$	$I_2 = 0.05A$	$I_3 = 0.05A$	$I_4 = 0.05A$
$R_{\text{Total}} = 1000\Omega$	$R_1 = 250\Omega$	$R_2 = 1500\Omega$	$R_3 = 500\Omega$	$R_4 = 1000\Omega$



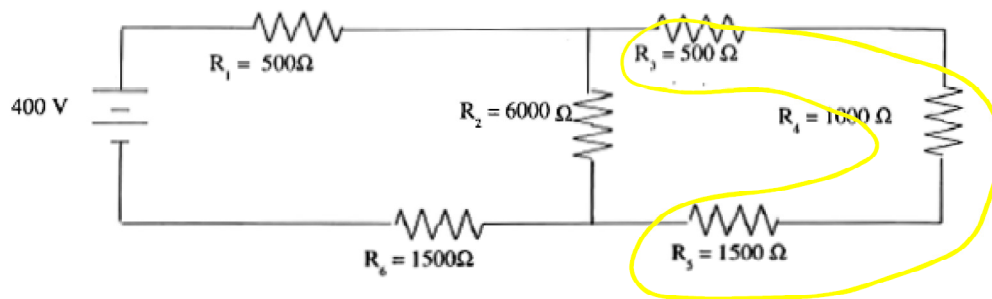
3.



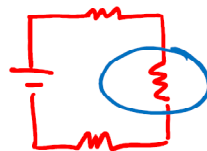
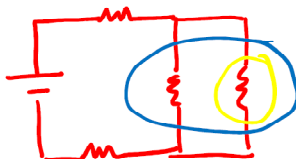
$V_{Total} = 50\text{ V}$	$V_1 = 25\text{ V}$	$V_2 = 5\text{ V}$	$V_3 = 5\text{ V}$	$V_4 = 20\text{ V}$
$I_0 = 0.05\text{ A}$	$I_1 = 0.05\text{ A}$	$I_2 = 0.025\text{ A}$	$I_3 = 0.025\text{ A}$	$I_4 = 0.05\text{ A}$
$R_{Total} = 1000\ \Omega$	$R_1 = 500\ \Omega$	$R_2 = 200\ \Omega$	$R_3 = 200\ \Omega$	$R_4 = 400\ \Omega$



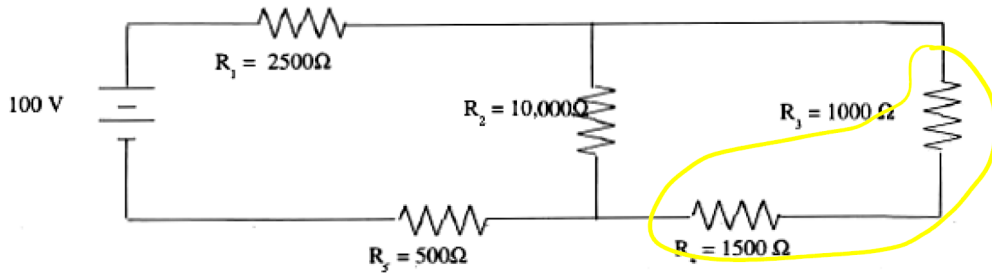
4.



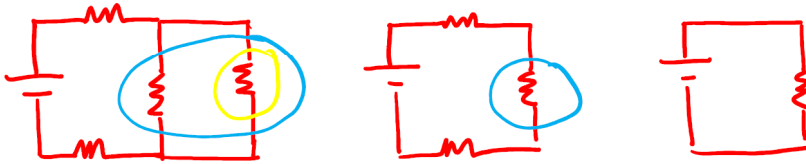
$V_{Total} = 400\text{ V}$	$V_1 = 50\text{ V}$	$V_2 = 200\text{ V}$	$V_3 = 33.5\text{ V}$	$V_4 = 67\text{ V}$	$V_5 = 100.5\text{ V}$	$V_6 = 150\text{ V}$
$I_0 = 0.1\text{ A}$	$I_1 = 0.1\text{ A}$	$I_2 = 0.033\text{ A}$	$I_3 = 0.067\text{ A}$	$I_4 = 0.067\text{ A}$	$I_5 = 0.067\text{ A}$	$I_6 = 0.1\text{ A}$
$R_{Total} = 4000\ \Omega$	$R_1 = 500\ \Omega$	$R_2 = 6000\ \Omega$	$R_3 = 500\ \Omega$	$R_4 = 1000\ \Omega$	$R_5 = 1500\ \Omega$	$R_6 = 1500\ \Omega$



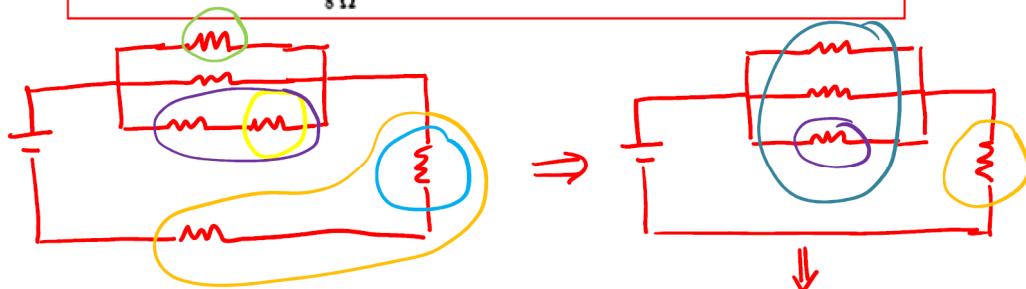
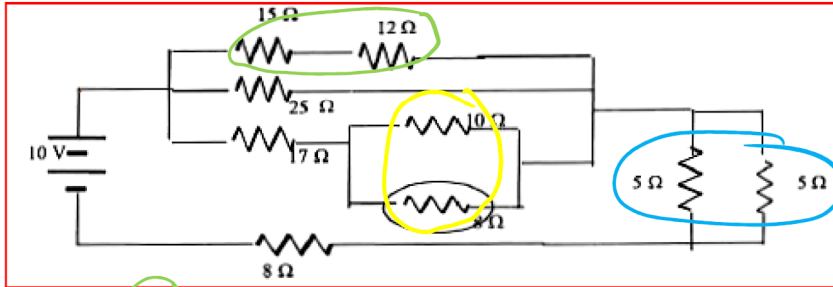
5.



$V_{\text{Total}} = 100\text{V}$	$V_1 = 50\text{V}$	$V_2 = 48\text{V}$	$V_3 = 16\text{V}$	$V_4 = 24\text{V}$	$V_5 = 10\text{V}$
$I_0 = 0.02\text{A}$	$I_1 = 0.02\text{A}$	$I_2 = 0.004\text{A}$	$I_3 = 0.016\text{A}$	$I_4 = 0.016\text{A}$	$I_5 = 0.02\text{A}$
$R_{\text{Total}} = 5000\Omega$	$R_1 = 2500\Omega$	$R_2 = 10000\Omega$	$R_3 = 1000\Omega$	$R_4 = 1500\Omega$	$R_5 = 500\Omega$



6. Determine the power in the circled resistor



~~0.12 W~~

$P = 0.12\text{W}$

