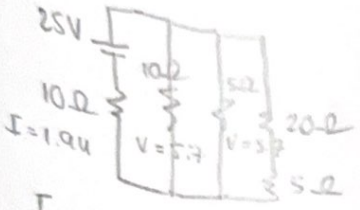
AT#8

1) $I = I \quad V = RI$



$I = 1.94$

$1.93 \times 2.94 = 5.67\,V$

$\frac{1}{R_x} = (1/25 + 1/5 + 1/10)^{-1} = 2.94$

$R_{eq} = 12.94\Omega$

$V_f = 5.7 \quad R_f = 4$

$I = \frac{5.67}{25} = 0.229\,A$

a) $I = 0.230\,A$

b) $V_{ab} = 5.67\,V$

2)

$10V - 2(i_1) - (i_1 - i_2) = 0$

$(i_1 - i_2) - 4i_2 - 5(i_2 - i_3) = 0$

$5(i_2 - i_3) - 3i_3 - 6 = 0$

1. $-3i_1 + i_2 = -10$
2. $i_1 - 10i_2 + 5i_3 = 0$
3. $5i_2 - 8i_3 = 6$

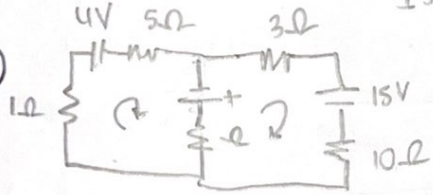
$I_1 = 3.31\,A$

$I_2 = -0.0637\,A$

$I_3 = -0.78\,A$

R(Ω)		i(mA)
1	—	3312
2	—	3375
3	+	637
4	+	390
—	—	+

3)



I) $I_1 - 4 - 5i_1 + 6 - (i_1 - 2_2) = 0$

II) $(i_1 - i_2) - 3i_2 - 15 - 6 - 10i_2 = 0$

$-7I_1 + I_2 = -2$

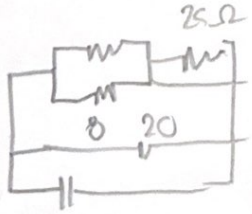
$I_1 - 14I_2 = 21$

$I_1 = 0.0721\,A \quad I_2 = -1.49\,A$

$V = RI$

I(A)	V(V)	P(W)
0.0721	4	0.284
1.562	6	9.3726
1.49	15	22.35

4)



$V = RI$

$V_6 = 24 = V_8$

$V_{68} = 24V \quad R_{68} = 3.428\Omega$

$I_{68} = \frac{V_{68}}{R_{68}} = 7A = I_{25}$

I_{25} = 7A $- 2x_{CB}$ = 28.428 Ω

V_{25} = 198.996 V = V20 $\quad R // \mathcal{E} = 100V$

$I_{20} = V/2 = 9.9498\,A$

$I_{25} = 7A$

$I_{20} = 9.95A$

$I_{25} = 7A$ //