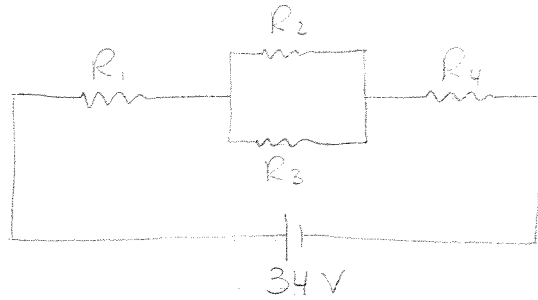


a) $R_1 = 4\ \Omega$
 $R_2 = 7\ \Omega$
 $R_3 = 10\ \Omega$
 $R_4 = 9\ \Omega$

$$V_{eq} = 34\text{ V}$$



Find R_{23}
(parallel)

$$\frac{1}{R_{23}} = \frac{1}{R_2} + \frac{1}{R_3}$$

$$R_{23}^{-1} = (7\ \Omega)^{-1} + (10\ \Omega)^{-1}$$

$$R_{23} = 4.1\ \Omega$$

Find R_{eq}
(series)

$$R_{eq} = R_1 + R_{23} + R_4$$

$$= 4\ \Omega + 4.1\ \Omega + 9\ \Omega$$

$$R_{eq} = 17.1\ \Omega$$

b) $V_{eq} = 34\text{ V}$
 $R_{eq} = 17.1\ \Omega$

$$V_{eq} = I_{eq} \cdot R_{eq}$$

$$(34\text{ V}) = I_{eq} \cdot (17.1\ \Omega)$$

$$I_{eq} = I_1 = I_4 = 1.99\text{ A}$$

Find V_{23} :

$$V_{23} = I_{23} \cdot R_{23}$$

$$= (1.99\text{ A}) \cdot (4.1\ \Omega)$$

$$V_{23} = 8.18\text{ V} = V_2 = V_3$$

Find I_2 and I_3 :

$$V_2 = I_2 \cdot R_2 \quad ; \quad V_3 = I_3 \cdot R_3$$

$$(8.18\text{ V}) = I_2 \cdot (7\ \Omega)$$

$$(8.18\text{ V}) = I_3 \cdot (10\ \Omega)$$

$$I_2 = 1.17\text{ A}$$

$$I_3 = .82\text{ A}$$