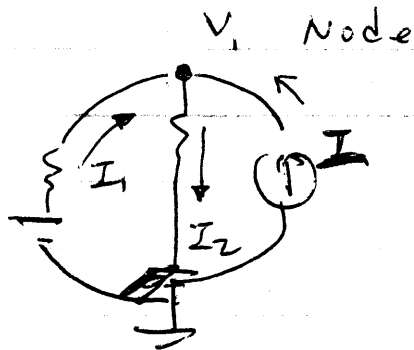
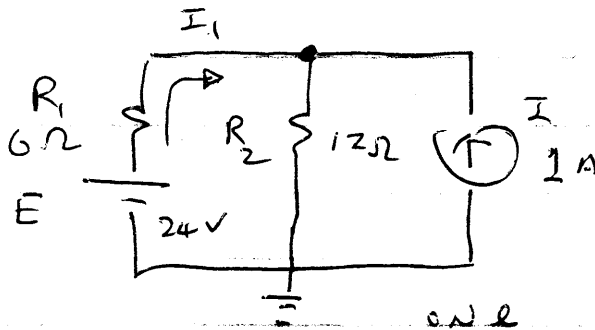


2012/3/28

(1)

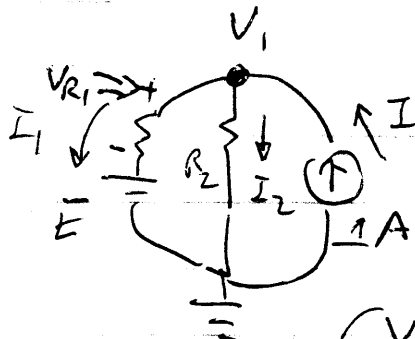
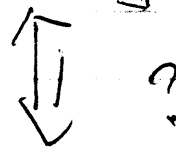
Ex 8-14



KCL Node 1

$$I + I_1 = I_2$$

$$I = I_2 - I_1$$



$$I = I_1 + I_2$$

$$1 = \frac{V_{R1}}{R_1} + \frac{V_1}{R_2}$$

$$V_{R1} = E - V_1$$

$$V_{R1} = V_1 - E$$

$$\frac{V_{R1}}{R_1} + \frac{V_1}{R_2} = 1$$

$$\left(\frac{V_1 - 24}{6} + \frac{V_1}{12} \right) = 1$$

$$\frac{V_1 - E}{6} + \frac{V_1}{12} = 1$$

$$12 * (\quad) = 12 * (1)$$

$$2(V_1 - 24) + V_1 = 12$$

$$3V_1 = 60$$

$$\left(\frac{V_1 - 24}{6} + \frac{1 * V_1}{12} \right) = (1) * 12$$

$$V_1 = 12$$

$$12, 2V_1, 48$$

(2)

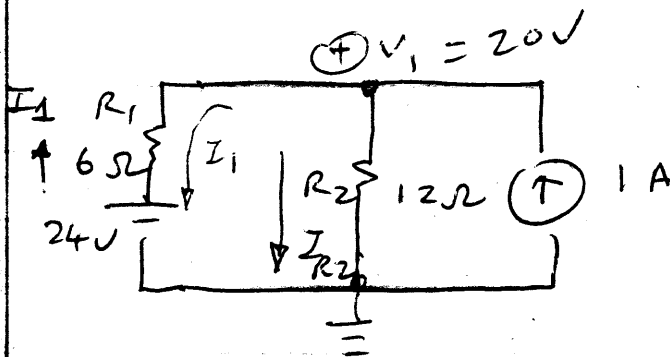
$$\frac{V_1 - 24}{6} + \frac{V_1}{12} = 1$$

$$12 \left(\frac{V_1 - 24}{6} \right) + \left(\frac{V_1}{12} \right) 12 = 12$$

$$2V_1 - 48 + V_1 = 12$$

$$3V_1 = 60$$

$$\boxed{V_1 = 20V} \quad \text{P. 306}$$



$$\sum \text{Node}_1 = 0$$

$$I = I_1 + I_2$$

$$I_{R2} = \frac{V_1}{R_2} = \frac{20V}{12\Omega} = 1.67A$$

$$I_{R1} = \frac{V_1 - E}{R} = \frac{20 - 24}{6\Omega} = \frac{-4V}{6\Omega} = -0.67A$$

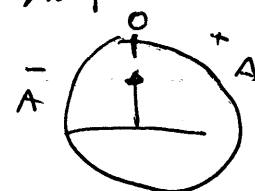
Magnitude of $I_{R1} = 0.67A$

direction Top down to Ground.

$$\boxed{-0.67A} \quad \text{DMM Amp}$$

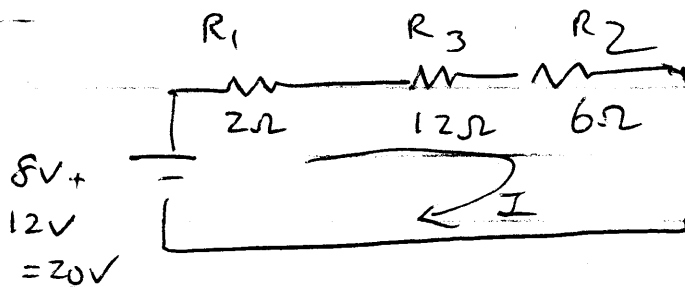
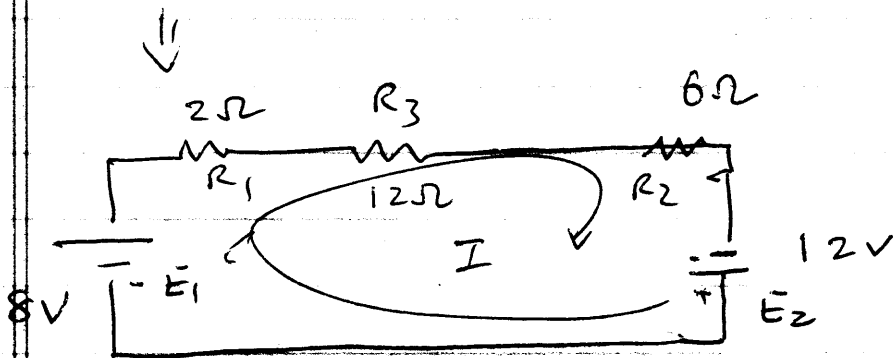
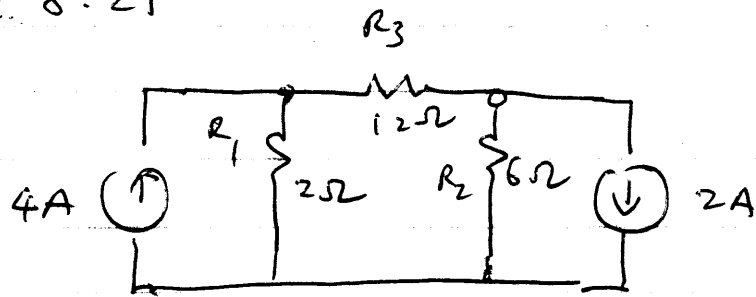


Analog meter



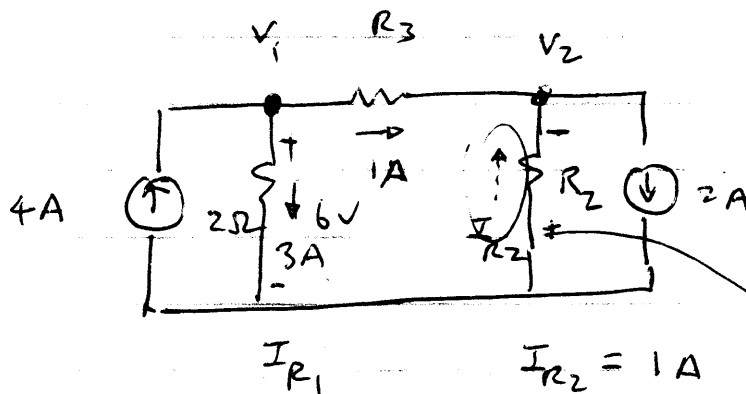
(3)

Ex. 8.21



$$I = \frac{20V}{2+12+6}$$

$$= \frac{20V}{20\Omega} = 1A$$



$$V_1 = I_{R1} \cdot R_1$$

$$= 6V$$

$$V_2 = I_{R2} \cdot R_2 = -6V$$