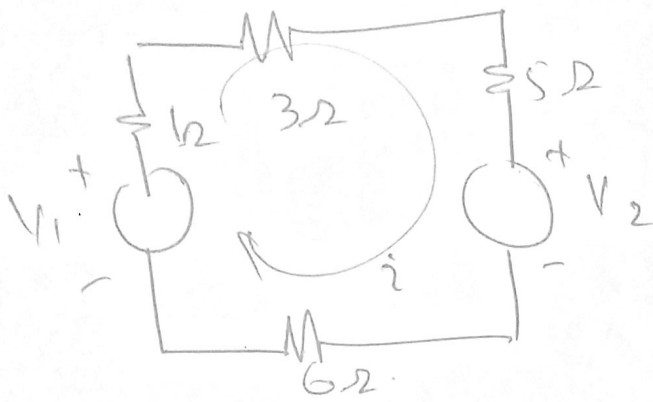
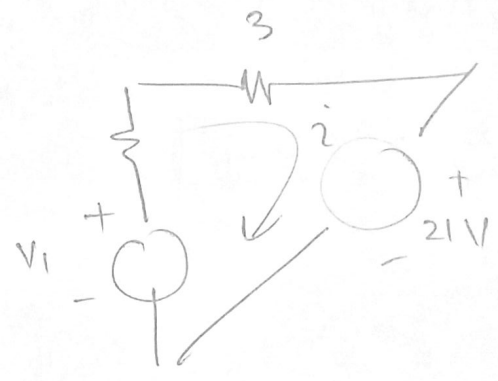


~~1-22~~
1-22

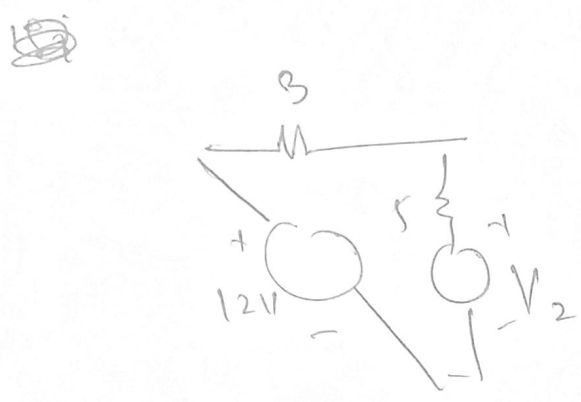


$$i = \frac{-V_1 + V_2}{1 + 6 + 5 + 3} = \frac{V_2 - V_1}{15}$$



~~2-11~~

$$\frac{21 - V_1}{3 + 1} = \frac{21 - V_1}{4} = 2$$



$$\frac{V_2 - 12}{5 + 3} = 2$$

$$\frac{V_2 - 12}{8} = 2$$

$$\frac{V_2 - 12}{8} = \frac{21 - V_1}{4} = \frac{V_2 - V_1}{15}$$

$$\frac{V_2 - 12}{8} = \frac{21 - V_1}{4}$$

$$V_2 - 12 = 42 - 2V_1$$

$$2V_1 + V_2 = 30$$

$$\frac{21 - V_1}{4} = \frac{V_2 - V_1}{15}$$

$$315 - 15V_1 = 4V_2 - 4V_1$$

$$315 = 11V_1 + 4V_2$$

$$11V_1 + 4V_2 = 315$$

$$V_2 = 30 - 2V_1$$

$$11V_1 + 4V_2 = 315$$

$$11V_1 + 4(30 - 2V_1) = 315$$

$$11V_1 + 120 - 8V_1 = 315$$

$$3V_1 = 315 - 120$$

$$V_1 = 195/3 = 65 \text{ V}$$

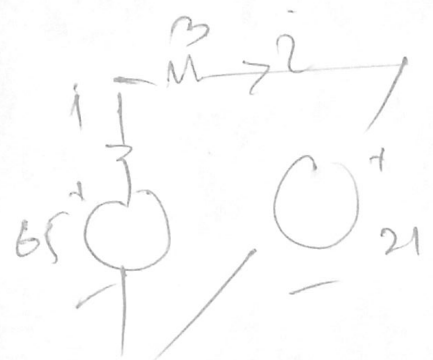
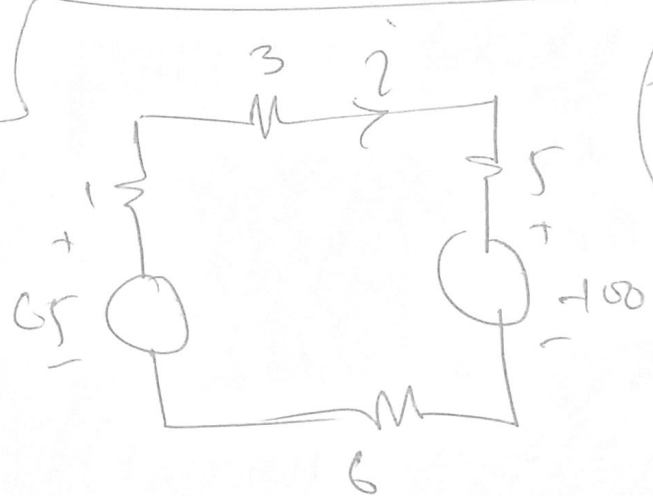
$$V_1 = 65 \text{ V}$$

$$V_2 = 30 - 2V_1$$

$$= 30 - 2(65)$$

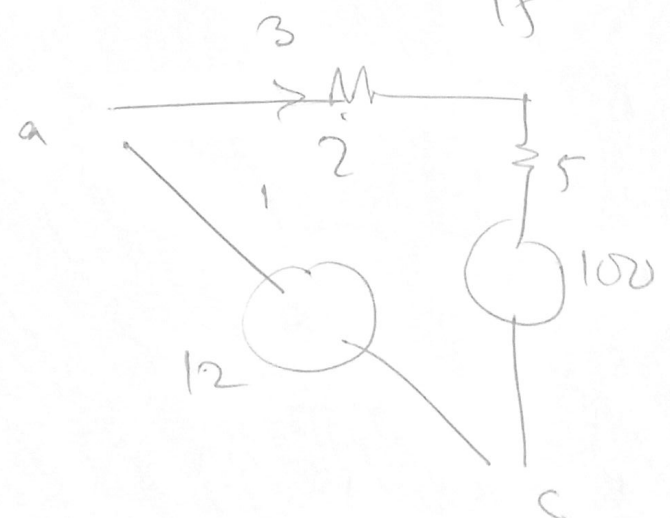
$$V_2 = -100 \text{ V}$$

Proof



$$\frac{65 - 21}{4} = 11 \text{ A}$$

$$i = \frac{65 + 100}{15} = 11 \text{ A}$$



$$\frac{100 - 12}{8} = \frac{88}{8} = 11 \text{ A} = i$$