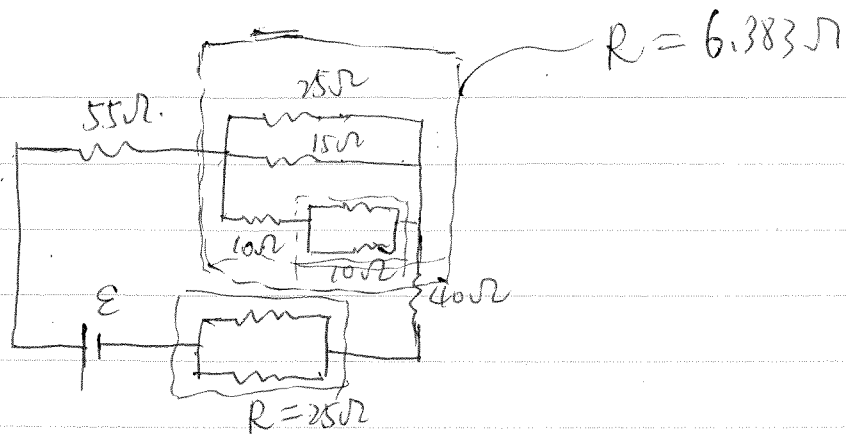


26.68



$$R_{\text{eff}} = 55 \Omega + 6.383 \Omega + 40 \Omega + 25 \Omega = 126.38 \Omega$$

$$P = I^2 R \quad I = \sqrt{\frac{P}{R}} = \sqrt{\frac{1}{40}} \text{ A} = 0.158 \text{ A}$$

$$\mathcal{E} = IR = \sqrt{\frac{1}{40}} \times 126.38 \Omega = \sqrt{\frac{1}{40}} \times 126.38 \text{ V} = 19.9 \text{ V}$$

26.74 (a) when S is open.

$$V_{ab} = 18.0 \text{ V}$$

(b) a is higher.

$$(c) I = \frac{V}{R} \quad I = \frac{18.0 \text{ V}}{6 + 3 \Omega} = 2 \text{ A}$$

$$V_b = IR = 2 \text{ A} \times 3 \Omega = 6 \text{ V}$$

(d)  $Q = CV$ .

$$\Delta Q = C \cdot \Delta V$$

$$\Delta Q_3 = C_3 \Delta V = C_3 (V_a' - V_a) = 3 \times 10^{-6} \text{ F} \times (6 - 18) \text{ V} = -3.6 \times 10^{-5} \text{ C}$$

$$\Delta Q_6 = C_6 \Delta V = 6 \times 10^{-6} \text{ F} \times (12 - 18) \text{ V} = -3.6 \times 10^{-5} \text{ C}$$

S is closed.