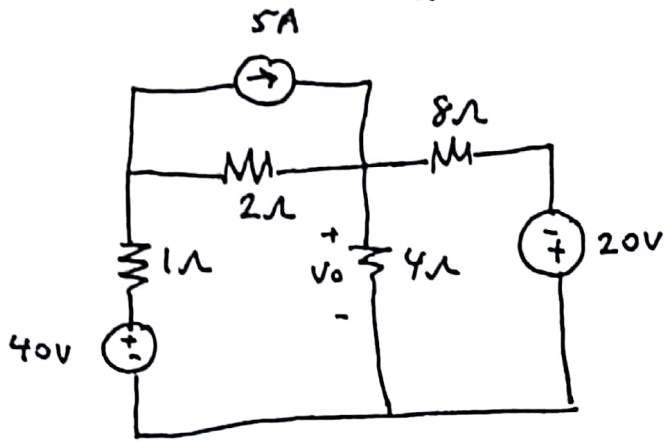
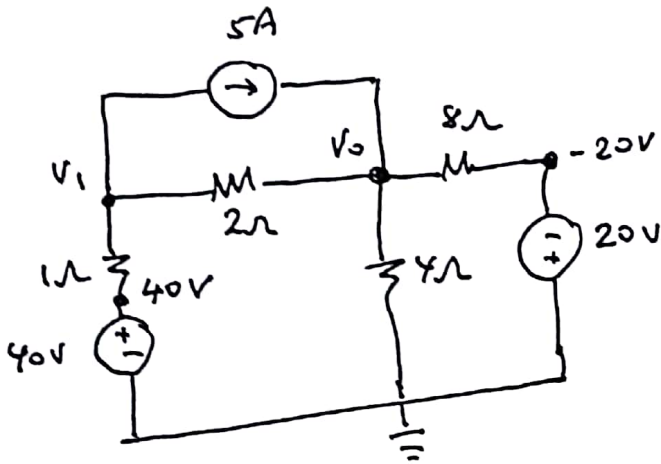


# QUIZ 11 - SOLUTION



Find  $V_o$ .



KCL at  $V_1$

$$2 \left[ \frac{V_1 - 40}{1} + \frac{V_1 - V_o}{2} + 5 = 0 \right]$$

$$2V_1 - 80 + V_1 - V_o + 10 = 0$$

$$3V_1 - V_o = 70 \dots (1)$$

KCL at  $V_o$

$$8 \left[ \frac{V_o}{4} + \frac{V_o - V_1}{2} + \frac{V_o + 20}{8} - 5 = 0 \right]$$

$$2V_o + 4V_o - 4V_1 + V_o + 20 - 40 = 0$$

$$-4V_1 + 7V_o = 20 \dots (2)$$

$$+ \left[ \begin{array}{l} 4(3V_1 - V_o = 70) \\ 3(-4V_1 + 7V_o = 20) \end{array} \right]$$


---


$$17V_o = 340$$

$$V_o = \frac{340}{17} = 20V$$