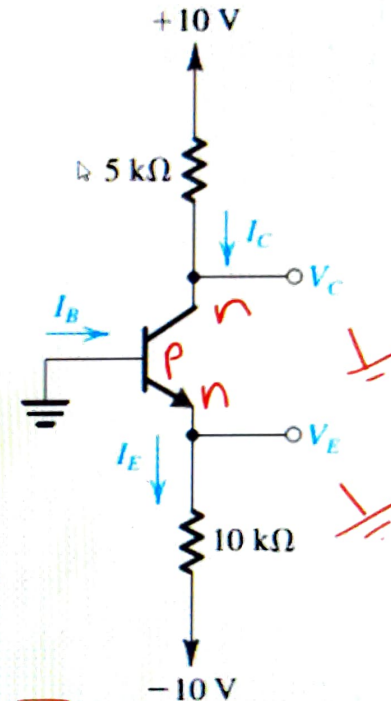


Problem

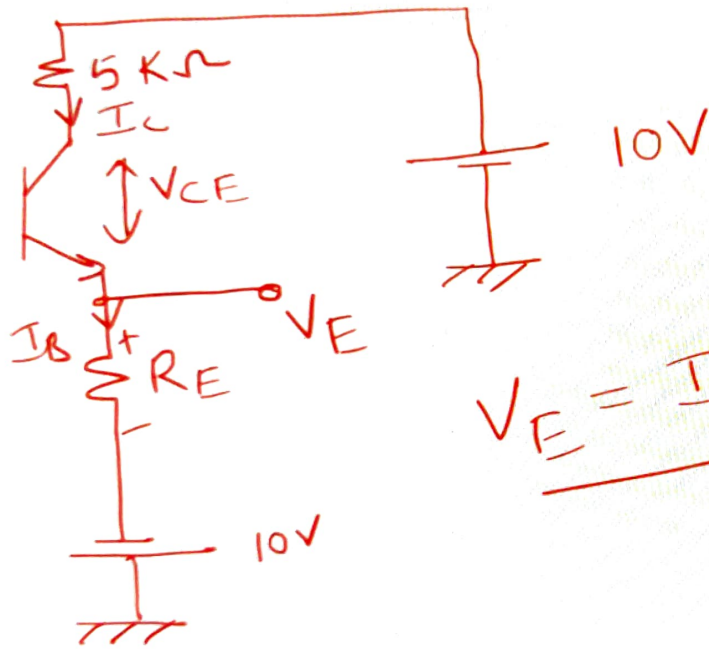
- In the circuit shown in Fig., the voltage at the emitter was measured and found to be -0.7 V. If $\beta = 50$, find I_E , I_B , I_C , and V_C .



Handwritten notes and circuit diagram:

$$V_C = V_{CE} + I_E R_E - 10$$

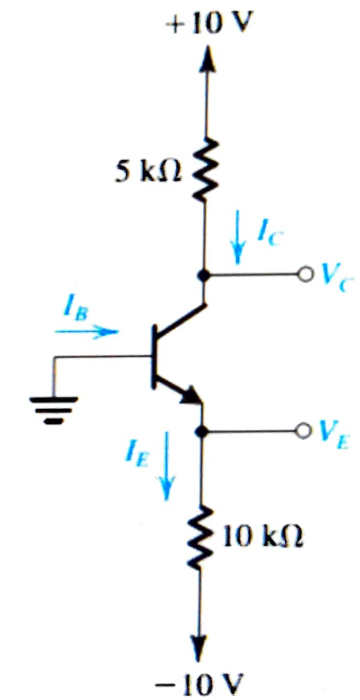


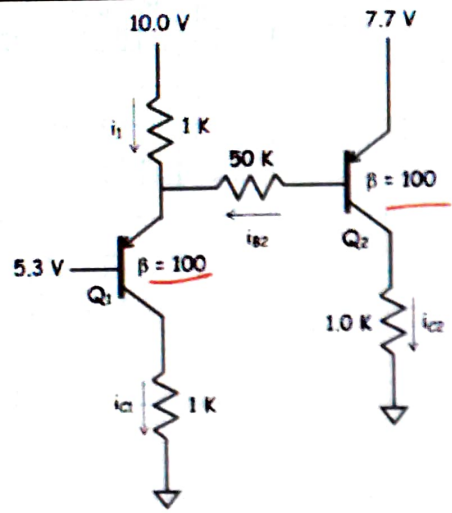


$$V_{CE} = V_C - V_E$$

$$10 = V_C - 5$$

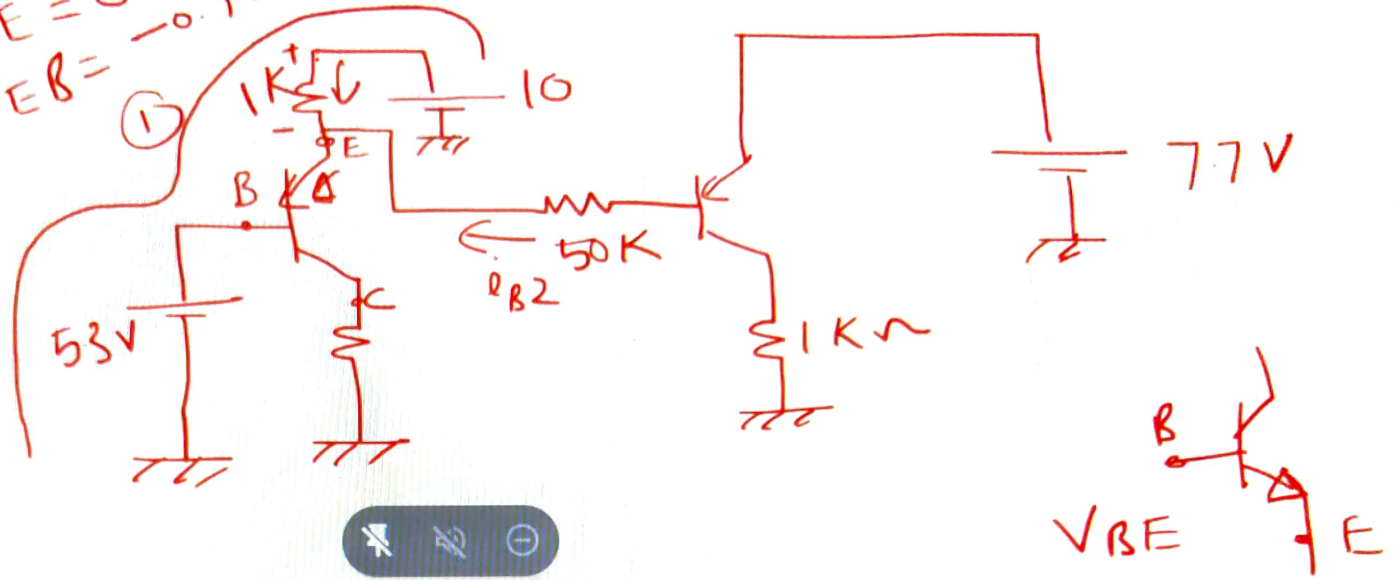
$$V_E = I_E R_E - 10$$



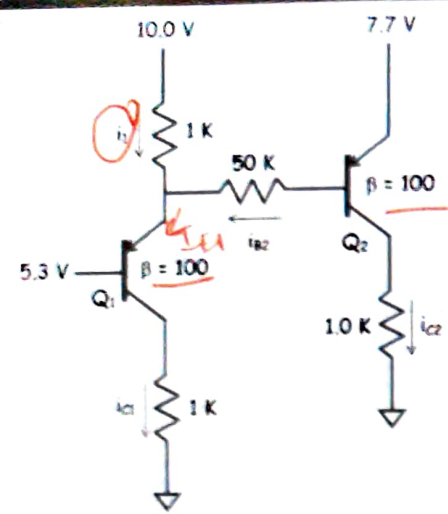


$$V_{BE} = 0.7V$$

$$V_{EB} = -0.7V$$

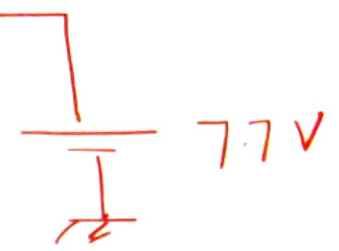
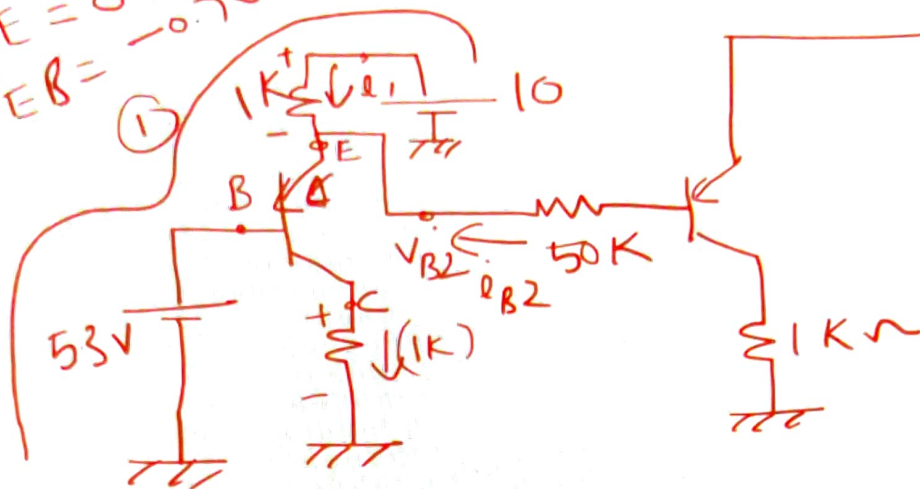


- 5 3 - 0.7



$$V_{BE} = 0.7V$$

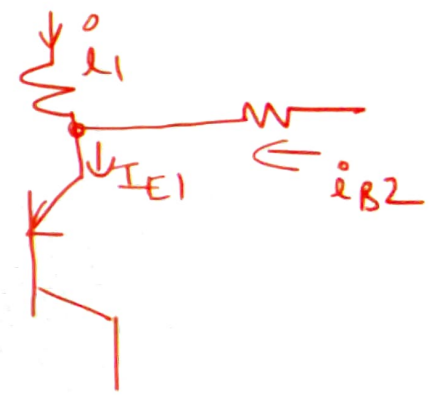
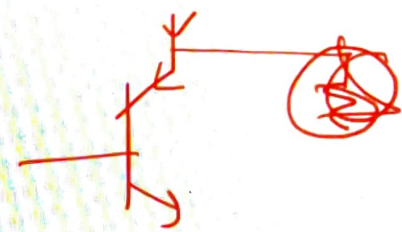
$$V_{EB} = -0.7V$$



$$-5.3 - 0.7 - (1K) i_1 + 10 = 0$$

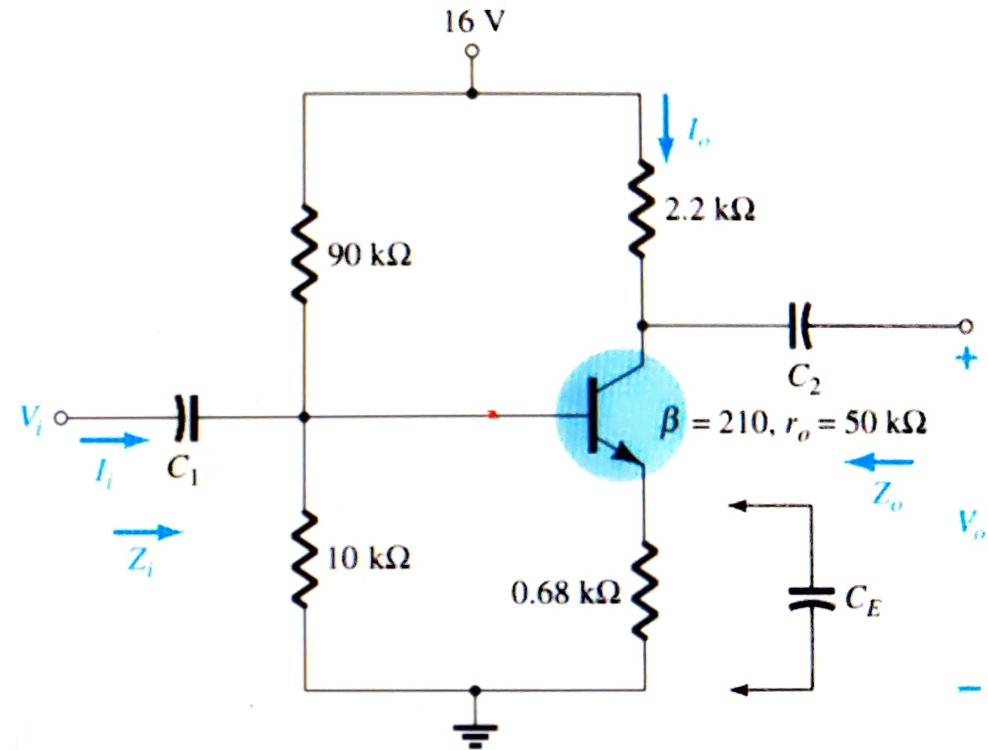
$$i_1 + i_{B2} = i_{E1}$$

$$V_{B2} = V_{EC} + (1K) R_e$$



Voltage divider configuration

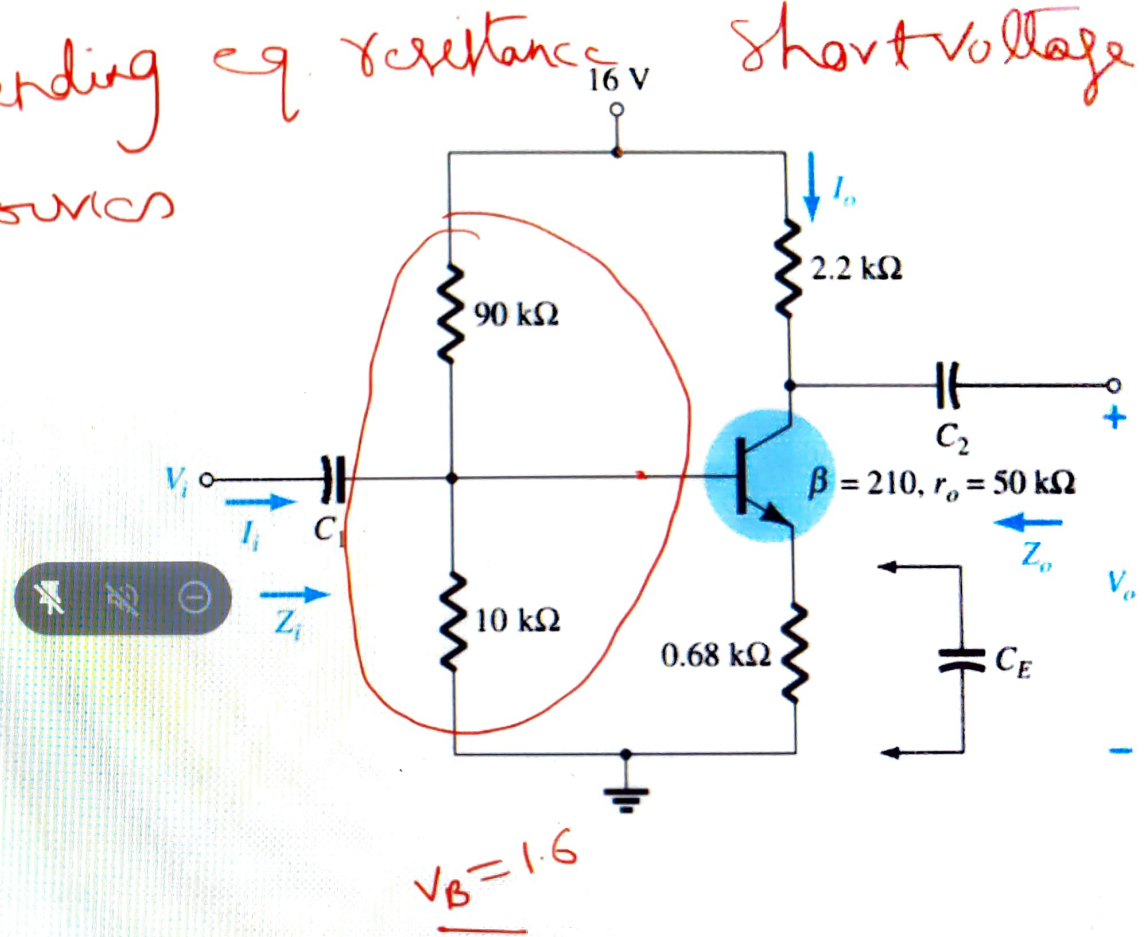
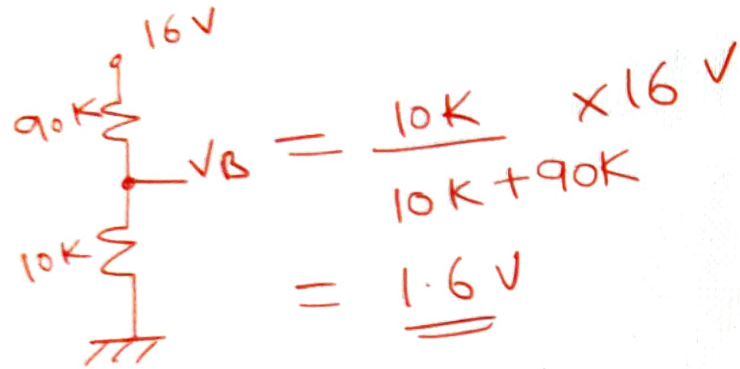
$$\begin{aligned}
 V_B &= \frac{10\text{K}}{10\text{K} + 90\text{K}} \times 16\text{V} \\
 &= \underline{\underline{1.6\text{V}}}
 \end{aligned}$$



Voltage divider configuration


for finding eq resistance
Sources

Short voltage

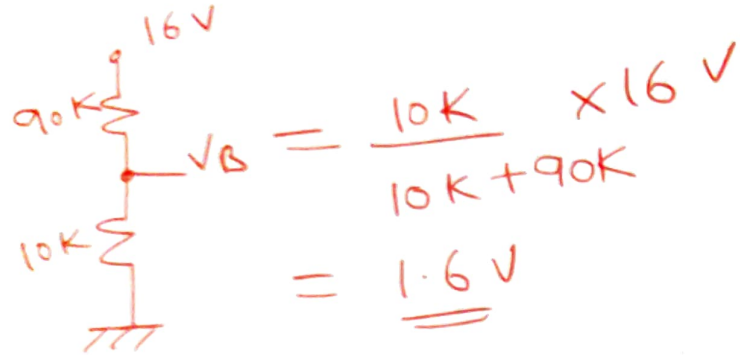


Voltage divider configuration

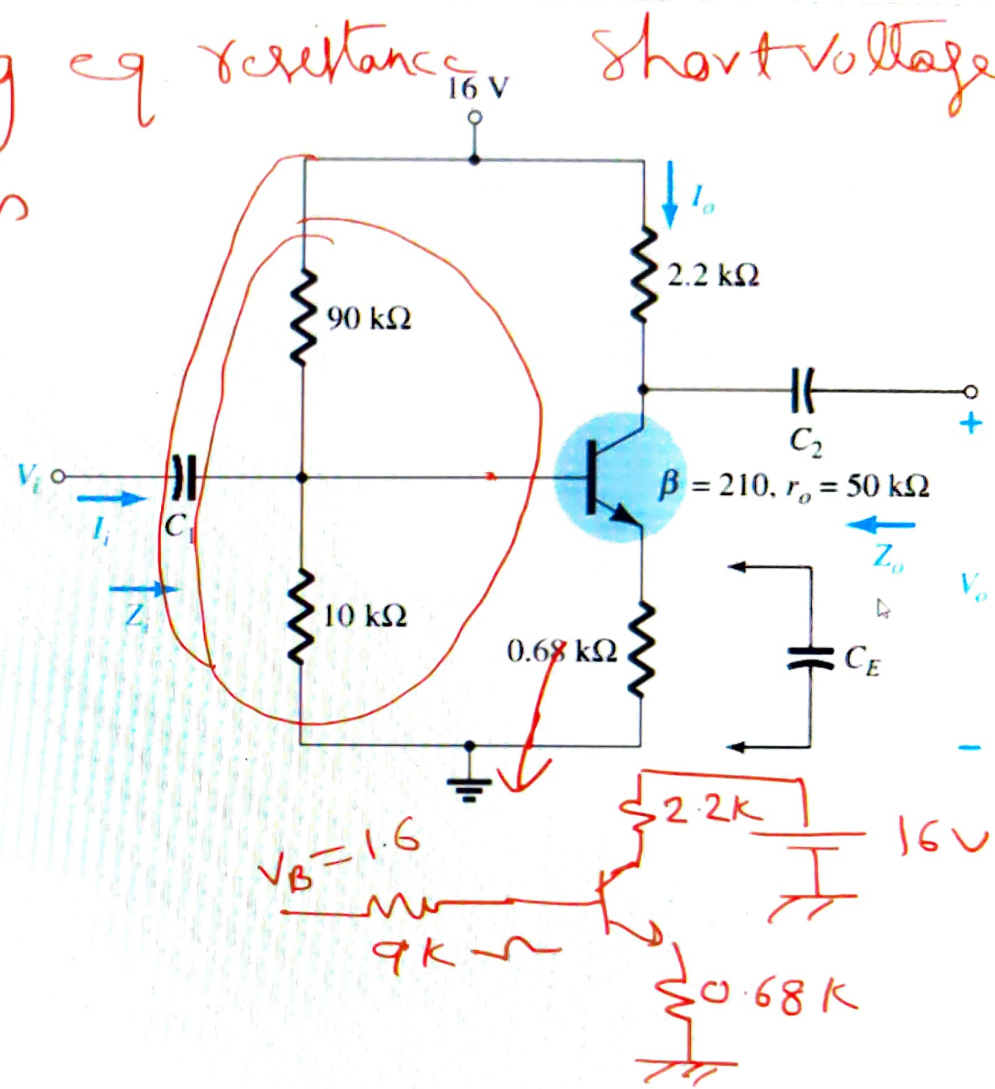
for finding eq resistance Short voltage



The diagram shows a circuit for finding equivalent resistance. A 16V DC voltage source is connected in series with a resistor. The output terminals are short-circuited, and the current through the short is labeled I_o .



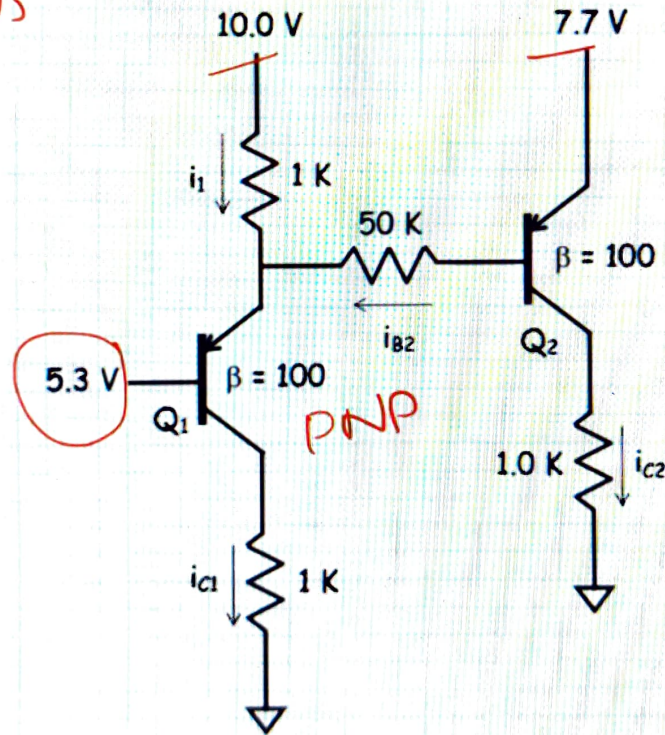
$$R_{eq} = \frac{90K \times 10K}{100K}$$
$$= \underline{\underline{9K\Omega}}$$



Problem

- Find currents and voltages

multi-stage amplifier
c/a



Problem

- Find currents and voltages

multi-stage amplifier
C/A

