



DC voltages and currents:

$$V_C \quad V_B \quad V_E \quad I_C \quad I_B \quad I_E (=?)$$

V_C : voltage at collector

Solution:

$$\because V_{BB} = V_{BE} + V_E \quad (\text{KVL})$$

$$V_E = V_{BB} - V_{BE} = V_{BB} - 0.7$$

$$I_E = \frac{V_E - 0}{R_E} = \frac{V_{BB} - 0.7}{R_E}$$

$$I_B = \frac{I_E}{\beta + 1} \approx \frac{I_E}{\beta} \quad I_E = I_B + I_C = I_B + \beta I_B$$

$$I_C = \alpha I_E = \frac{\beta}{\beta + 1} I_E \approx I_E$$

$$V_C = V_{CC} - I_C R_C \quad (?) \quad V_{CC} = V_{RC} + V_C = I_C R_C + V_C$$