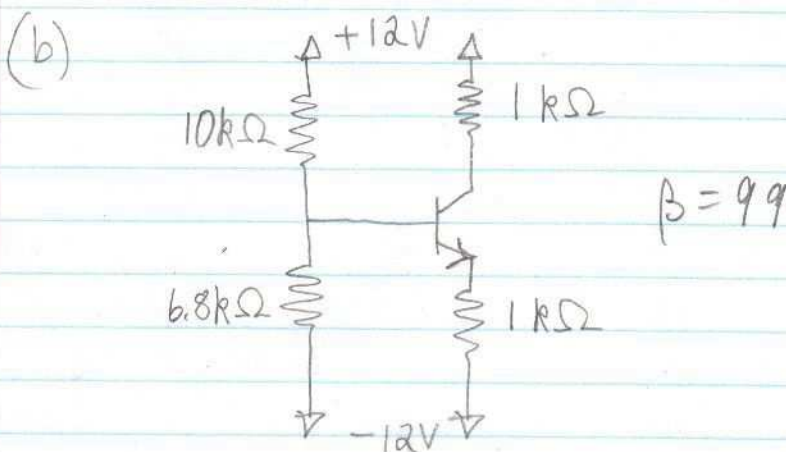
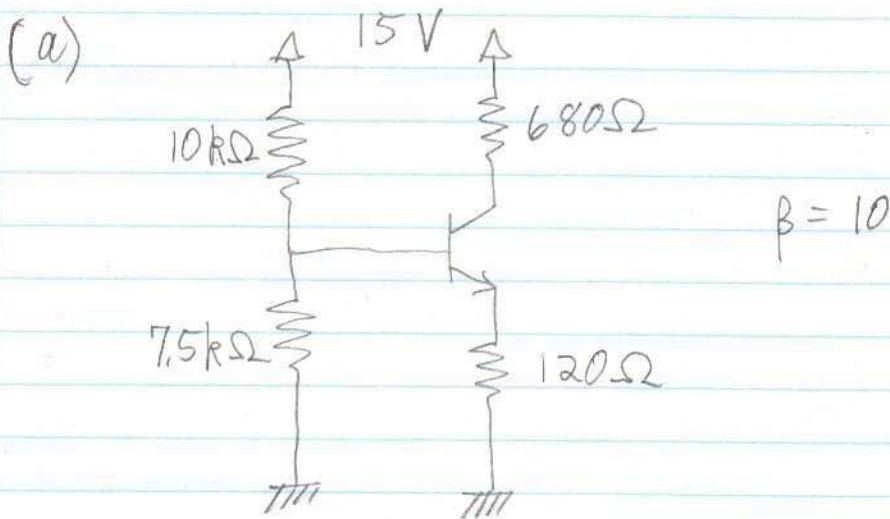
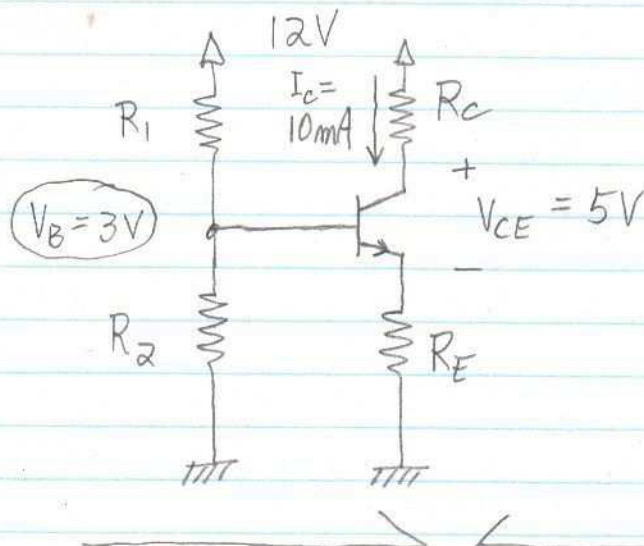


① Calculate the Q-points of the BJTs in the circuits below:



(2) Calculate R_1 , R_2 , R_C , R_E in the circuit below given that $\beta = 100$, $V_B = 3V$, $I_C = 10mA$, $V_{CE} = 5V$ and $R_1 || R_2 = 20k\Omega$:



Answers:

(1)(a)

$$V_{BE} = 0.7V$$

$$V_{CE} = 6.702V$$

$$I_B = 1.0219 \text{ mA}$$

$$I_C = 10.219 \text{ mA}$$

active

$$h_{ie} = 24.66 \Omega$$

(1)(b)

$$V_{BE} = 0.7V$$

$$V_{CE} = 6.759V$$

$$I_B = 86.636 \mu A$$

$$I_C = 8.577 \text{ mA}$$

active

$$h_{ie} = 290.9 \Omega$$

(2)

