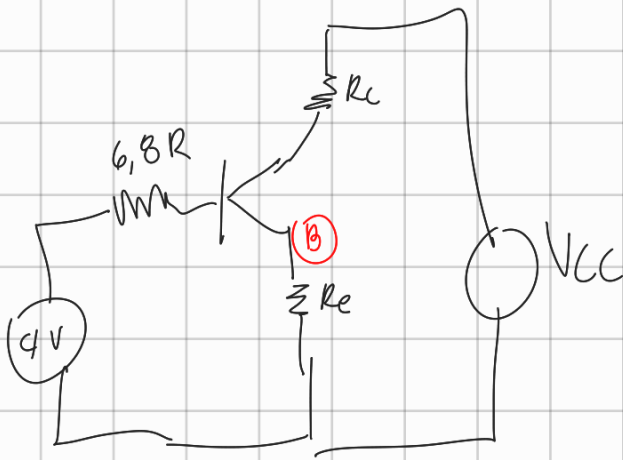


$$R_{Th} = \frac{4R^2}{5R} + 6R = \frac{4R}{5} = 6,8R$$

$$V_{Th} = V_R = \frac{V_{cc} \cdot R}{4R + R} = \frac{V_{cc}}{5} = 4V$$

(A)

Circuito equivalente



$$\beta I_{Base} = I_{colector}$$

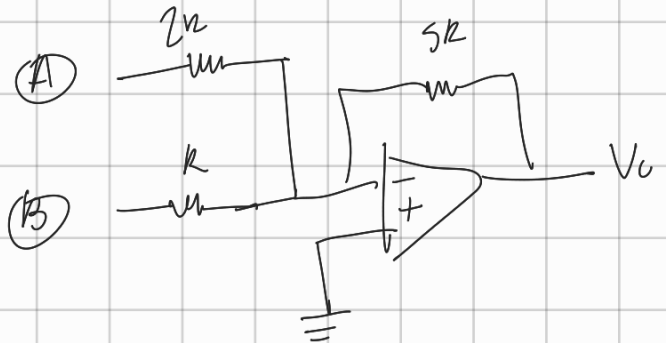
$$I_{emisor} = I_B + I_C$$

mallá Base

$$4V = I_B \cdot 6,8R + V_{be} + I_B R_e$$

$$4V = I_B \cdot 6,8R + 0,7 + 1,5 I_B$$

$$220\Omega \Omega = R$$



$$V^+ = V^-$$

$$I_A + I_B = I_C$$

$$\frac{A - (V^-)}{2R} + \frac{B - (V^-)}{R} = \frac{(V^-) - V_o}{5R}$$

$$\frac{A}{2R} + \frac{B}{R} = -\frac{V_o}{5R}$$

$$\frac{5R A}{2R} + \frac{5R B}{R} = -V_o$$

$$\frac{5}{2} A + 5B = -V_o$$

$$\frac{5}{2} \cdot 4 + 5B = -(-17,5)$$

$$10 + 5B = 17,5$$

malla colector

$$5\beta = 7,5 \rightarrow \beta = \frac{7,5}{5}$$

$$\beta = 1,5 \text{ V}$$

$$20 \text{ V} = V_{ce} + V + I_c \cdot R_c$$

$$20 = 3 + 1,5 + I_c \cdot R_c = 1292 \, \Omega = R_c$$

$$\frac{V_B}{R_e} = I_c$$

$$\beta = \frac{I_c}{I_B} = \frac{12 \text{ mA}}{120 \, \mu\text{A}} = \beta = 100$$

$$\frac{V_B}{R_e} = I_c + I_B$$

$$\frac{V_B}{R_e} = \beta I_B + I_B$$

$$\frac{V_B}{R_e} = I_B (\beta + 1)$$

$$\frac{V_B}{I_B (\beta + 1)} = R_e = 124 \, \Omega$$

