$$V_{BB} = V_{CC} \frac{R_2}{R_1 + R_2}$$

$V_{BB} = V$ $\quad V_{EE} = V_{BB} - V_{BE}$

$V_{BE} = 0.7\,V$

$-V_{BB} = V_{EE} + V_{BE}$

$= I_E R_E + V_{BE}$

$= 10m \times 100 + 0.7$

$= 1.7\,V$

$$V_{BB} = V_{CC} \frac{R_2}{R_1 + R_2}$$

$$1.7 = 10 \times \frac{100}{R_1 + 100}$$

$$R_1 + 100 = \frac{1000}{1.7}$$

$$R_1 = 488.24\,\Omega$$

Task 11 → Stuff Voltage divider

$V_{CC} = 10V$, V_{CE} at midpoint

$I_C = 10mA$

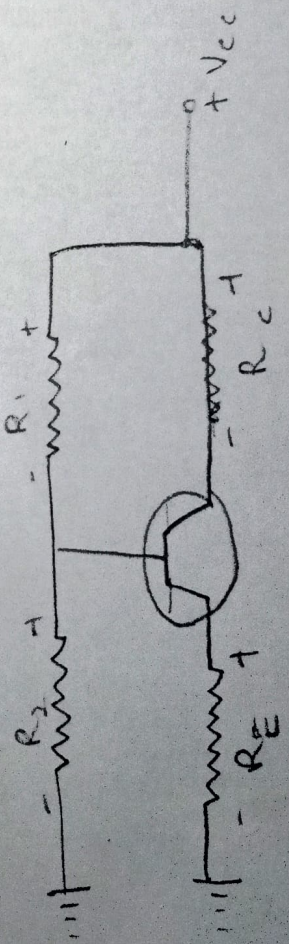
$Bd_c = 100 - 300$

$V_E = 0.1 V_{CC} = 0.1 \times 10 = 1V$

$$R_E = \frac{V_E}{I_E}$$

$I_E \approx I_C \Rightarrow 10mA$

$$R_E = \frac{1}{10 \times 10^{-3}} = 100\,\Omega$$

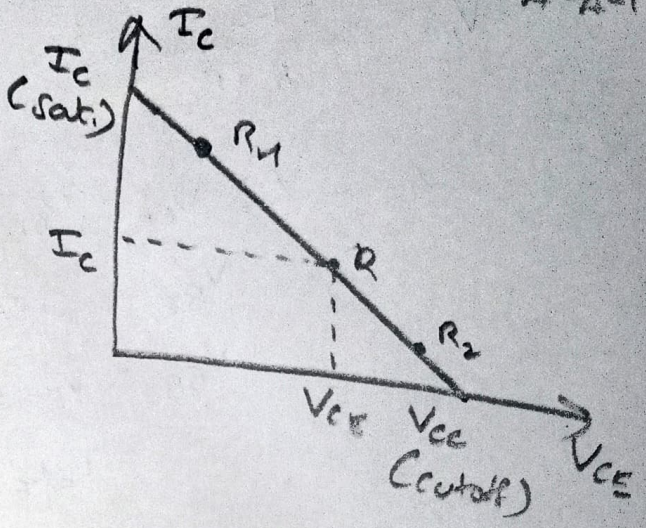


$A^2 = AA$

$A^2, A^{-1} = AA^{-1}$

$A = A^2 A^{-1}$

$$R_C = \frac{0.4 V_{CC}}{I_C} = \frac{0.4 \times 10}{10 \times 10^{-3}} = 400\Omega$$



Stiff Voltage divider

$$R_2 \leq 0.01 \beta d_c R_E$$

βd_c : minimum of range $\Rightarrow 100$

$$R_2 \leq 0.01 \times 100 \times 100$$

$$R_2 \leq 100\Omega$$

$$R_2 \leq 0.1 \times 100 \times 100$$

$$R_2 \leq 1k\Omega$$

$$V_{BE} \approx 0.7V$$

$$V_{BB} = V_{EE} + V_{BE}$$

$$= 1 + 0.7 = 1.7V$$

$$V_{BB} = \frac{V_{CC} \times R_2}{R_1 + R_2}$$

$$1.7 = \frac{10 \times 1000}{R_1 + 1000}$$

$$R_1 = 4832.35\Omega$$