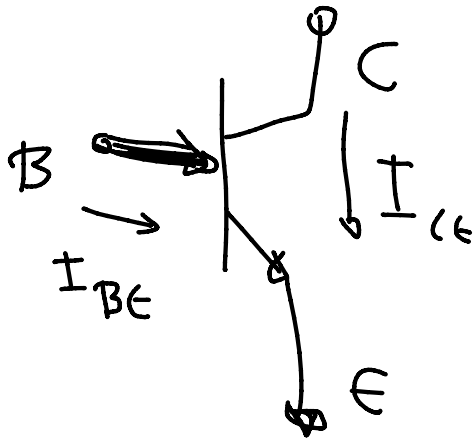
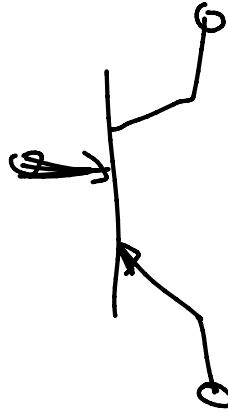


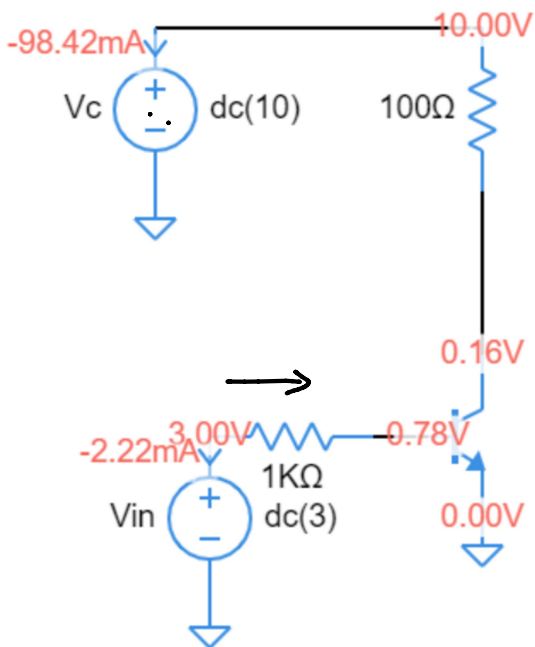
N-P-N



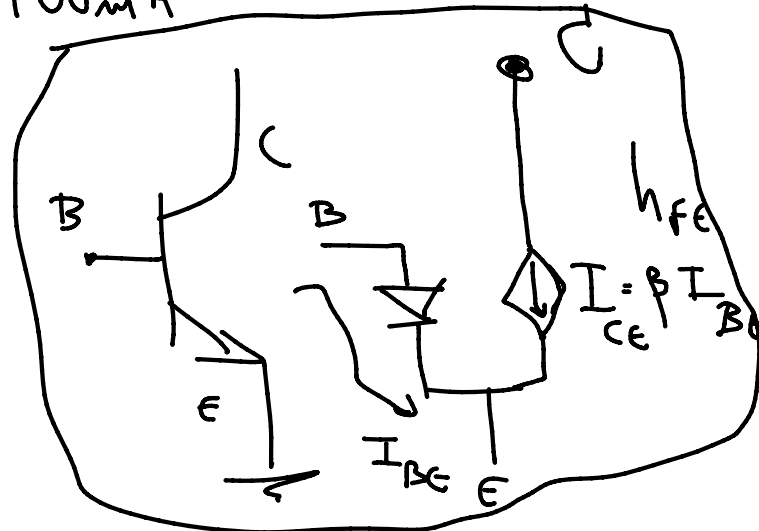
P-N-P



$$\frac{I_{CE}}{I_{BE}} = \beta \quad 20-200$$



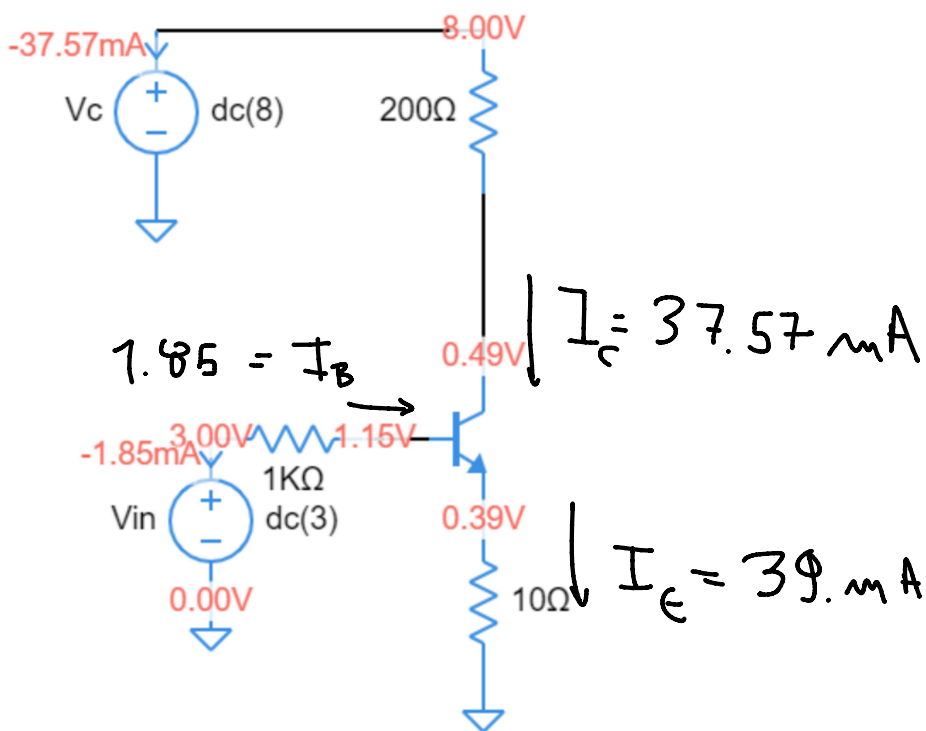
~100mA



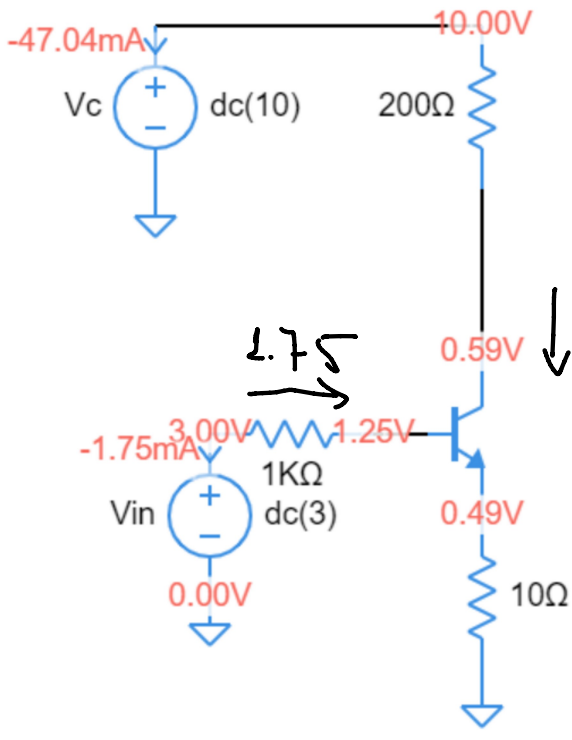
$$\frac{100 \text{ mA}}{2.22} \approx 50$$

$$0.12 \times 78 \cdot 10^{-3} + 0.77 \times 2.23 \cdot 10^{-3}$$

$$= 0 \text{ mW} + 1.5 \text{ mW} \approx \underline{10 \text{ mW}}$$



$$\frac{I_e}{I_b} = \frac{37.57}{1.85} = 20.3 = h_{FE}$$



$$\frac{47.04}{1.75} = 26.88$$

