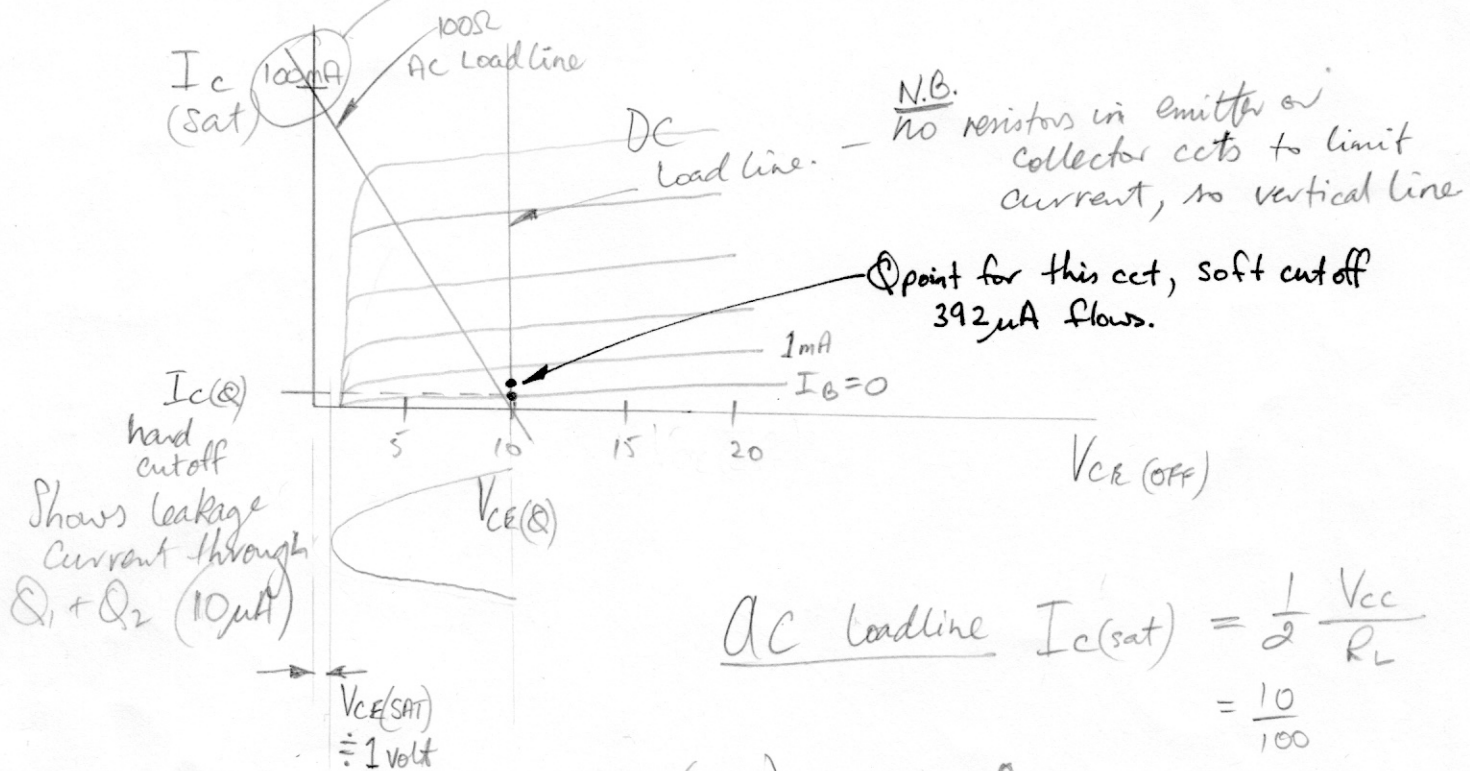


$$V_{CE(Q)} = \frac{V_{cc}}{2} = \frac{20}{2} = 10 \text{ Volts}$$

$$\text{Average } I_c = \frac{\frac{1}{2} \frac{V_{cc}}{R_L}}{\pi} = 31.8 \text{ mA}$$



$$\text{AC loadline } I_c(\text{sat}) = \frac{1}{2} \frac{V_{cc}}{R_L} = \frac{10}{100}$$

⑧ 10 Volts<sup>Peak</sup> in gives 9.9 volts out (peak) - 30 mA<sub>DC</sub> measured

$$\text{Voltage gain} = \frac{V_o}{V_i} = \frac{9.9}{10} = 0.99 \text{ (emitter follower)}$$

⑩ if  $V_{pp} = 19.8$  Volts undistorted,  $P_o = \frac{19.8^2}{8 R_L} = 490 \text{ mW}$

⑪  $I_{cc} = \left( \frac{20 - 1.4}{10K} \right) + 30 \text{ mA} = 31.8 \text{ mA} = 0.636 \text{ Watts } P_{\text{source}}$

$$\eta = \frac{490}{636} = 77\%$$