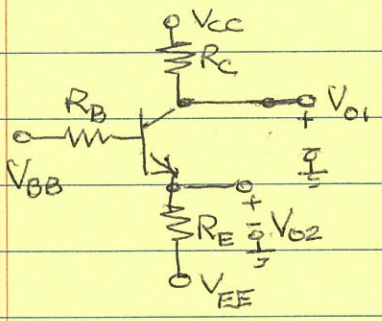
TEXT PROBLEMS: 4.20, 4.34, 4.37

PROBLEM A



Parameters: $\beta = 100$, $R_C = 0.5\,k\Omega$, $R_E = 1.0\,k\Omega$

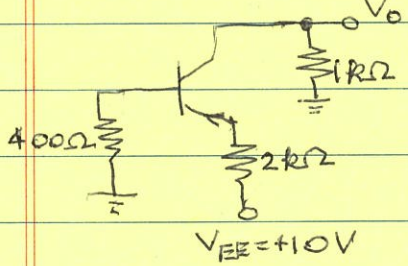
$R_B = 44\,k\Omega$, $V_{CC} = +15V$, $V_{EE} = -15V$

$V_{BB} = -8V$

1. Determine V_{O1} and V_{O2}
2. What new value of R_C makes $V_{O1} = 0$?
3. What new value of R_C makes $V_{O2} = 0$?

If one of these is not possible, why not?

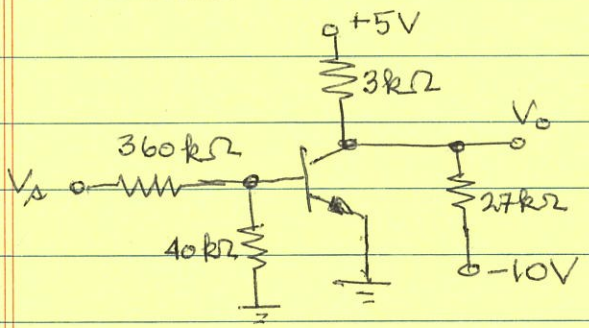
PROBLEM B



1. $\beta = 150$, determine I_C and V_{CE}.
2. Repeat (1) for $\beta = 50$

NOTE: the BJT is a pnp.

PROBLEM C



Given $\beta = 150$ and the BJT has negligible saturation current, sketch the transfer characteristic V_O vs. V_S for $-10V \le V_S \le +10V$

Carefully label all critical ordinate and abscissa values.