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 nearest value of \( R_C \) makes \( V_{o1} = 0 \)?

3. What nearest value of \( R_C \) makes \( V_{o2} = 0 \)?

If one of these is not possible, why not?

PROBLEM B

\( V_0 = +10V \)

1. \( \beta = 150 \), determine \( I_C \) and \( V_{CE} \)

2. Repeat (i) 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 \( V_C vs. V_B \) for \(-10V \leq V_B \leq +10V\).

Carefully label all critical ordinate and abscissa values.