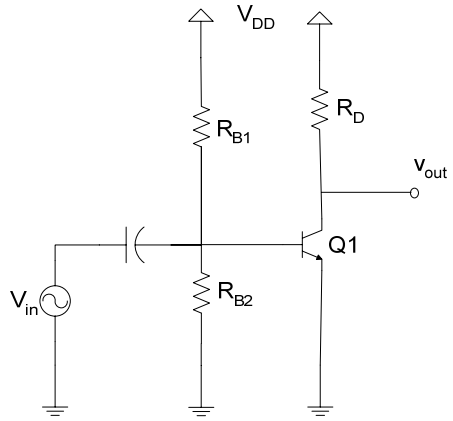
Question #1

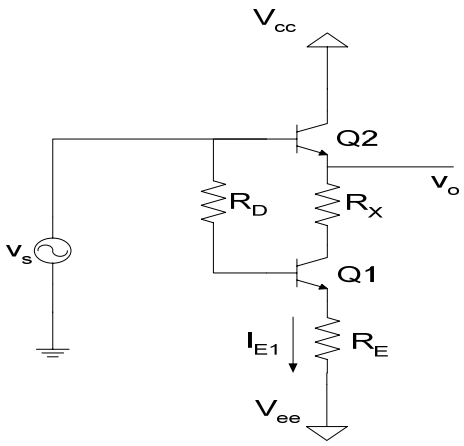


Consider this common-emitter amplifier. You must bias the BJT so that you can get the maximally symmetric output swing. Design assuming a V_B of 0.7V. Find an expression that relates the resistances R_{B2}, R_{B1} and R_D to the values of V_{DD} and β. For V_{DD}=10V and β=100, choose R_{B1}=9kΩ, R_{B2}=1kΩ and calculate R_D.

Question #2 (problem 5.83 from text)

Question #3

In this circuit, you may neglect the Early Effect. Assume both transistors are identical (same β) and have V_{BE} = 0.7V.



Assume the following: v_s = 0, R_X = 50Ω, R_D = 70kΩ and I_{E1} = 1mA. Find a condition on β that ensures that Q1 will be in the active mode. (4 pts)