1. Use $|V_{BE}| = 0.7$, $\beta = 100$. Analyze the following circuit(s) to find all DC currents and voltages. Analyze the circuit to find the midband gain, $V_o/V_{sig}$, $Rin$ (ignore $Rs$), $Rout$ (ignore $R_L$), and find the low frequency pole values. {Each circuit below is worth 1 problem for a total of 3 problems}

(a) ![Circuit 1](image1)

(b) ![Circuit 2](image2)

(c) ![Circuit 3](image3)

2. Note that the circuit below is the combination of (b) and (a) combined. Analyze the circuit to find the new $Rin$ (ignore $Rs$), $Rout$ (ignore $R_L$), and midband gain, $V_o/V_{sig}$. What is the value of $f_o$ for this circuit?

![Combined Circuit](image4)

3. Note that the circuit below is the combination of (a) and (c) combined. Analyze the circuit to find the new $Rin$, $Rout$, and midband gain. What is $f_o$?