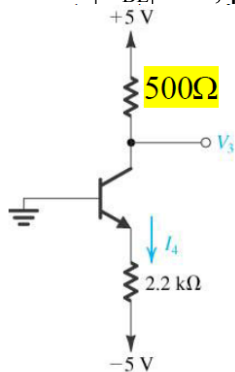


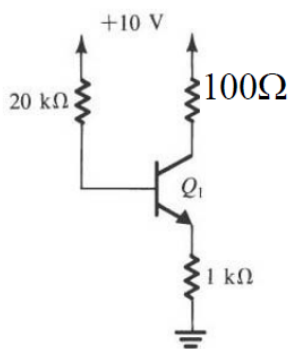
1. The terminal voltages of various *npn* transistors are measured during operation in their respective circuits with the following results:

Case	E	B	C	Mode
1	0	0.7	0.7	
2	0	0.8	0.1	
3	-0.7	0	0.7	
4	-0.7	0	-0.6	
5	-2.7	-2.0	0	
6	0	0	5	

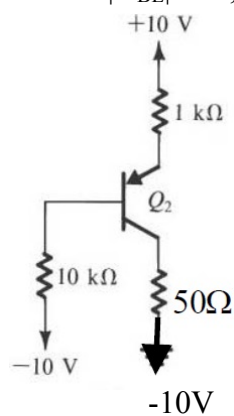
2. Use $|V_{BE}|=0.7$, $\beta=100$. Find I_B , I_C , I_E , V_B , V_C , V_E .



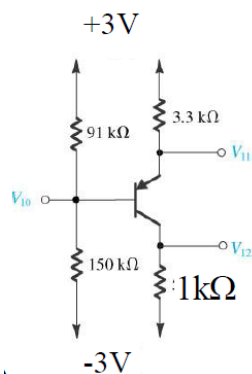
3. Use $|V_{BE}|=0.7$, $\beta=100$. Find I_B , I_C , I_E , V_B , V_C , V_E .



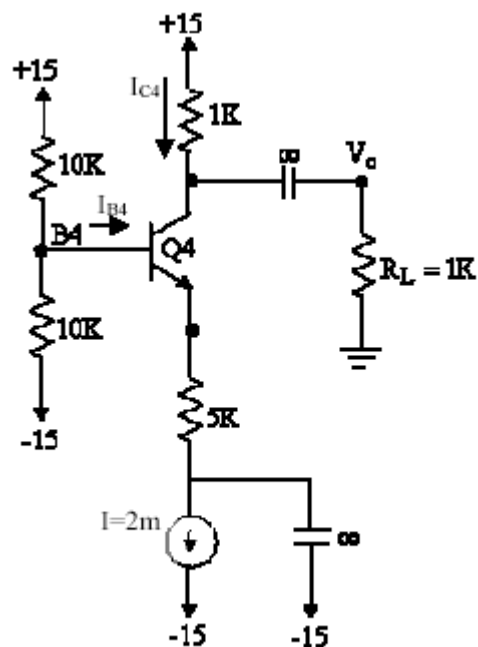
4. Use $|V_{BE}|=0.7$, $\beta=100$. Find I_B , I_C , I_E , V_B , V_C , V_E .



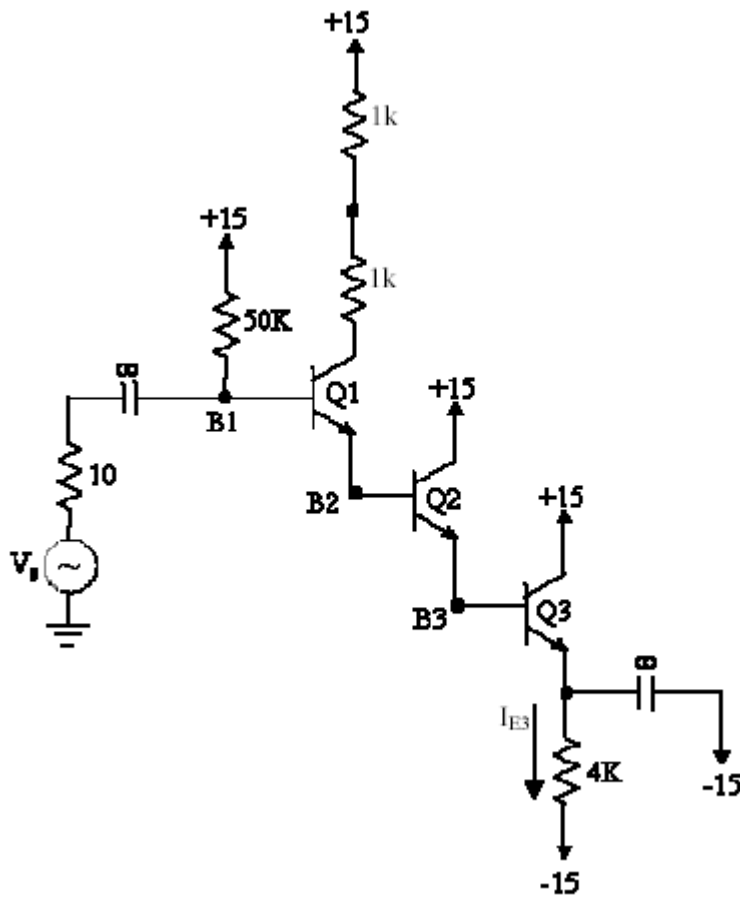
5. Use $|V_{BE}|=0.7$, $\beta=100$. Find I_B , I_C , I_E , V_B , V_C , V_E .



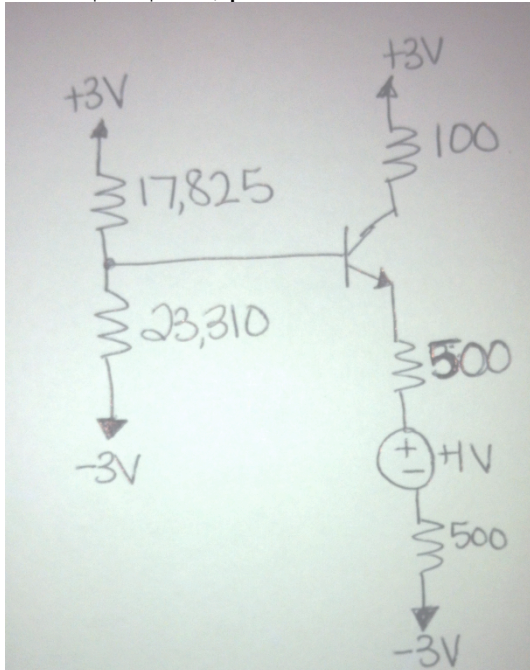
6. For the circuit on the right. Use $|V_{BE}|=0.7$, $\beta=100$, $V_T=25\text{mV}$. Find I_{B4} , I_{C4} , I_{E4} , V_{B4} , V_{C4} , V_{E4} . Assume capacitors act as opens for DC analysis.



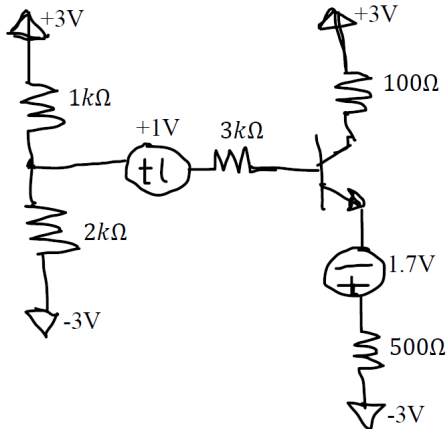
7. Use the circuit below. Use $|V_{BE}|=0.7$, $\beta=100$, $V_T=25\text{mV}$. Find I_{B1} , I_{B2} , I_{B3} , I_{C3} , I_{E3} , V_{B1} , V_{C1} , V_{B2} , V_{B3} , V_{E3} . V_s is an AC source. Assume capacitors act as an open for DC analysis.



8. Use $|V_{BE}|=0.7$, $\beta=100$. Find the DC values: I_B , I_C , I_E , V_B , V_C , V_E .



9. Find I_E , V_E , I_B , V_B , I_C , V_C
 Let $\beta=100$.



10. Let $\beta=99$.
 Find the DC values for I_E , V_E , I_B , V_B , I_C , V_C . Verify your assumption.

