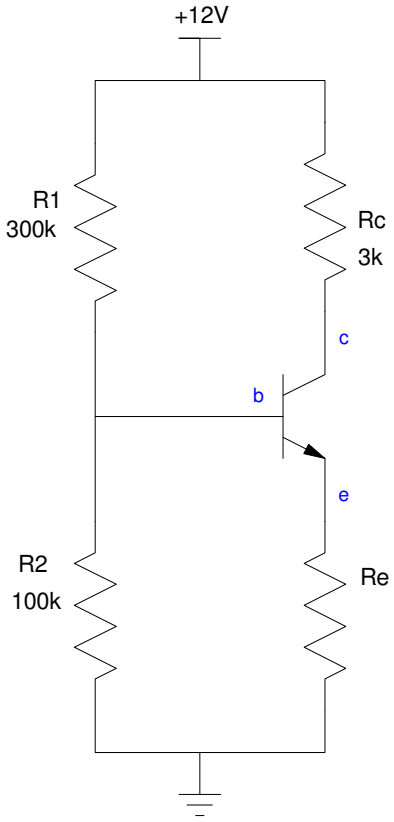
ECE 321 - Quiz #4 - Name _____

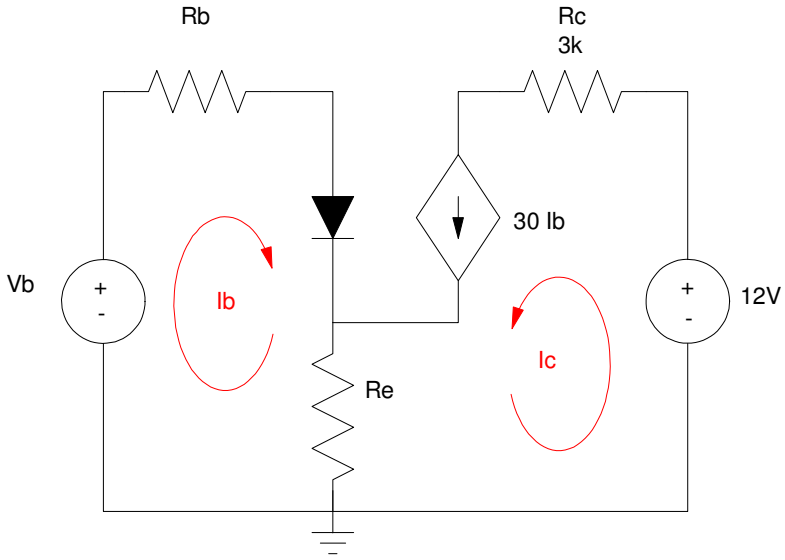
BJT Amplifiers & 2-Port Models

1) BJT Amplifier: DC Analysis. Determine the Thevenin equivalent of R1 and R2 as well as the Q-point. Assume ideal silicon transistors:

- |Vbe| = 0.7V
- $\beta = 30$
- Re = 900 + 100*(your birth month) + (your birth day)

Re 900 + 100*mo + day	Vb	Rb	Vce	Ic





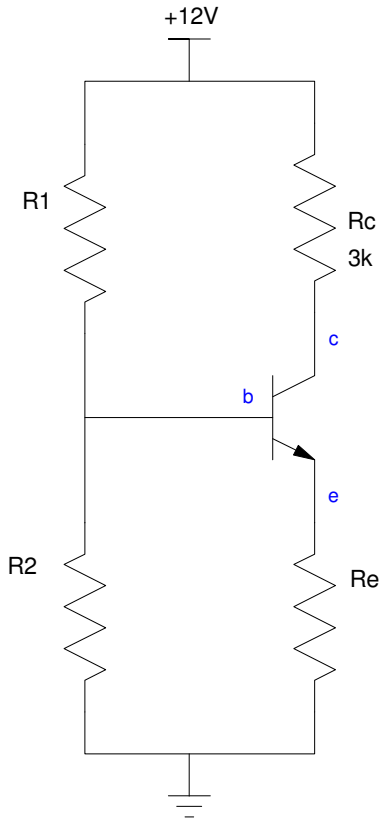
2) BJT Amplifier: DC Design. Determine R1 and R2 so that

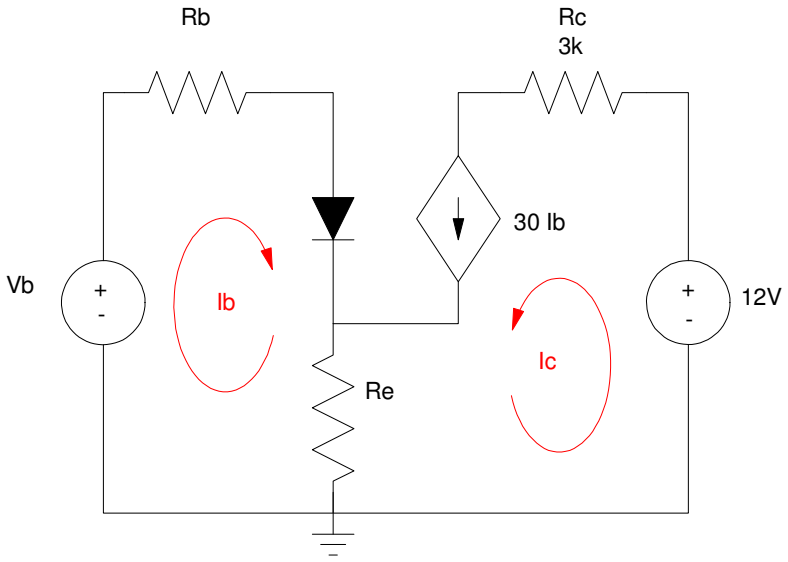
- The Q point is Vce = 6.00V and
- The Q point is stabilized for variations in β

Assume

- Ideal silicon transistors (Vbe = 0.7V, β = 30)
- Re = 900 + 100*(birth month) + (birth day).

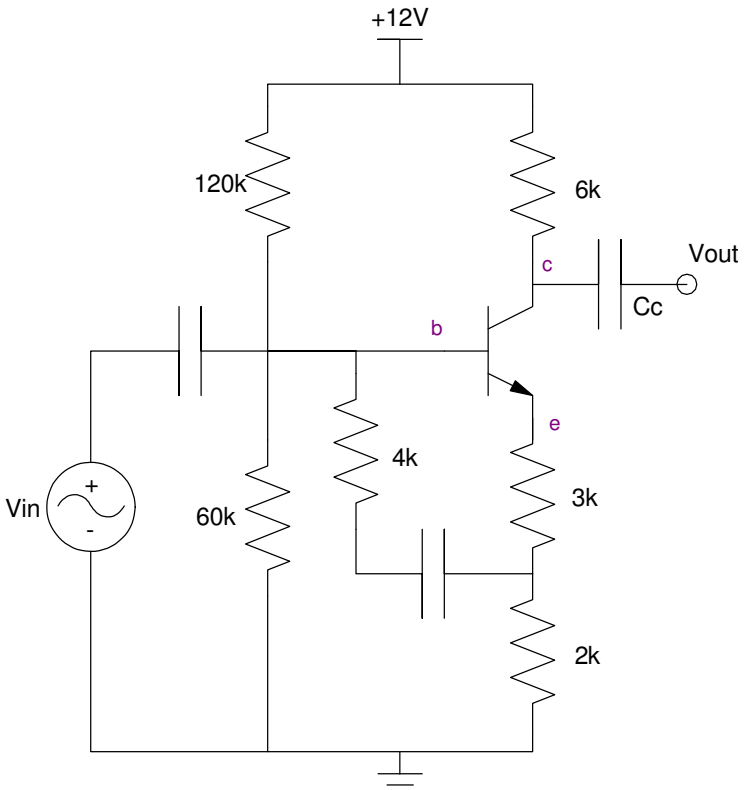
Re 900 + 100*mo + day	R1	R2	Vb	Rb





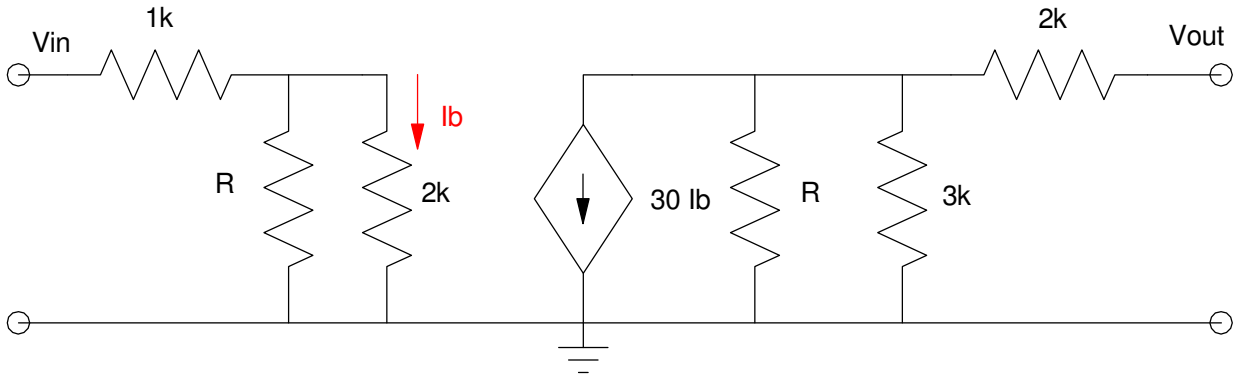
3) BJT: AC Analysis: Draw the small signal model for the following BJT amplifier. Assume

- $r_f = 2000\Omega$
- $\beta = 30$



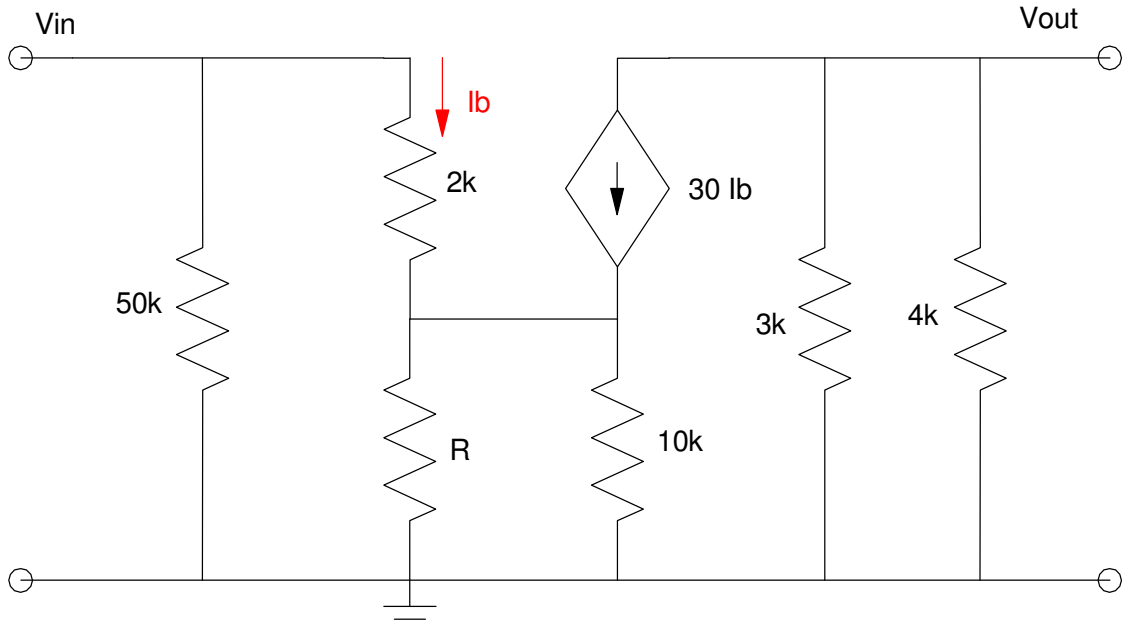
4) 2-Port Models. Determine the 2-port model for the following circuit:

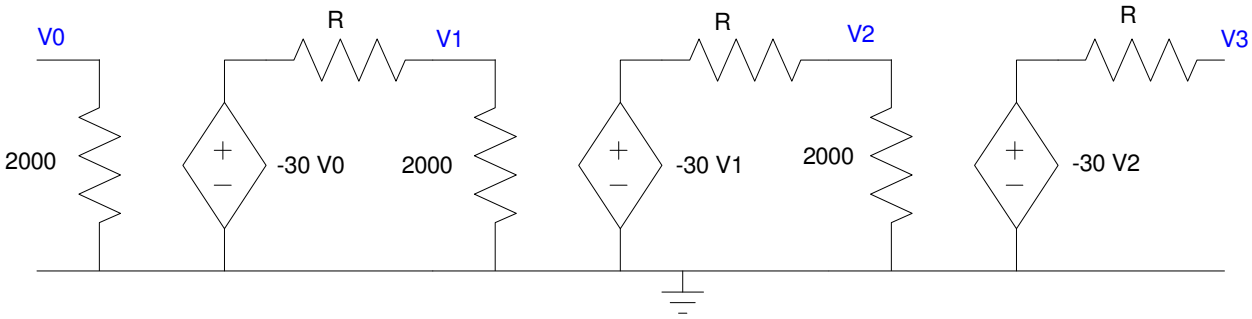
R 900 + 100*mo + day	Rin	Ain	Rout	Ao



5) 2-Port Models. Determine the 2-port model for the following circuit:

R 900 + 100*mo + day	Rin	Ain	Rout	Ao



6) Determine the 2-port model for three cascaded CE amplifiers

R 900 + 100*mo + day	Rin	Ain	Rout	Ao