EE3703: Analog Circuits Laboratory
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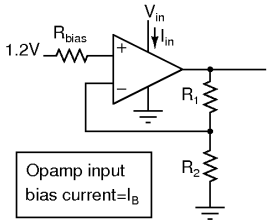
# Experiment 3: Voltage regulator

1) The figure below shows a scheme for reducing error due to bias currents($I_B$, which are drawn by both inputs of the opamp). What value will you set $R_{bias}$ to such that the output is the same as when $I_B$=0.




2) What is the input current of the LM324(=LM124) opamp? Find out from the datasheet

3) What is the (maximum) base current of BC107A when it carries a collector current of 0.5mA(The datasheet may have measurements for some other values. Use the nearest one).

4) What is the typical VBE value for BC107A in active region when it carries 0.5mA collector current?(The datasheet may have measurements for some other values. Use the nearest one).

5) What is the approximate dc loop gain(numerical value) for the circuit below at no load and full load(125Ω)? For this, you can assume ideal exponential for the BJTs, no base currents, and unity gain for emitter followers.