1) Find the datasheet for the BurrBrown OPA334.
   a) What is the common mode input range, and what does this tell you about the
      opamp topology?
   b) What is the low frequency gain, in dB and volts/volt?
   c) What is the phase margin for unity gain feedback?
2) Find the datasheet for the BurrBrown OPA340.
   a) What is the common mode input range?
   b) Based on the simplified schematic, and assuming that Vbias1 and Vbias2 are set
      to keep the cascodes in saturation, sketch Gm for the input stage vs. the common
      mode input voltage from rail to rail. Define Gm in this case as (the differential
      current flowing into the output stage controller) divided by (the differential input
      voltage).
3) For each of the current mirrors on the next page, assume that all transistors are 100/1,
   and that Iref = 1.6mA.
   a) For the source in figure 3, find the range of values for VBN that keep all devices in
      saturation. Use a value in the middle of this range for your spice plots and
      calculations.
   b) use spice to plot the output current vs. output voltage
   c) use spice to plot the output resistance vs. output voltage
   d) calculate the turnon voltage for each source and plot it on both plots
   e) calculate the expected current and resistance for each source and plot them on the
      appropriate plot.
4) Design a unity-gain-stable folded cascode op-amp which can swing to within 400mV
   of both rails over a single-sided supply range of from 2.5 to 5.5 volts. You may use at
   most 1 resistor in your design - all other devices must be MOSFETs. Verify the
   performance of your amplifier with Bode plots at operating points 400mV from each
   rail at both min and max supply voltage. What is the lower limit on your supply
   voltage? Why?