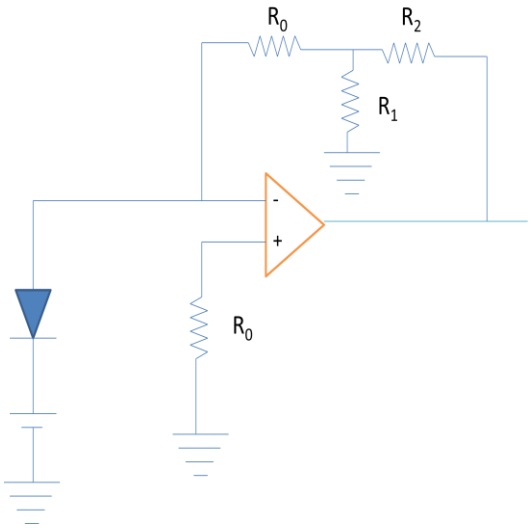
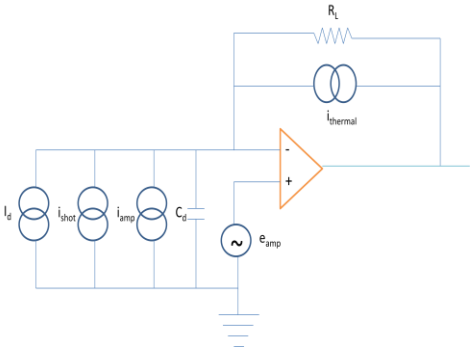
1. <u>Feedback Tee trans-impedance.</u>



   a. What is the trans-impedance gain of the above circuit?
   b. What would be the offset voltage due to offset input currents into the op-amp (I_+ and I_-)?
   c. What's the advantage as compared with the regular compensated trans-impedance circuit studied in class?

2. <u>Noise in trans-impedance circuits.</u>



The above diagram is the equivalent circuit of all noise sources in a basic trans-impedance amplifier.

   a. Assuming all noise sources are white, and that the op-amp gain is: $= \frac{A_{dc}}{1+if/f_c}$, analyze the contribution to the photo-detection SNR at different frequencies.

b. Would adding a capacitor in parallel with R_L help? If so, what capacitance value would you choose?