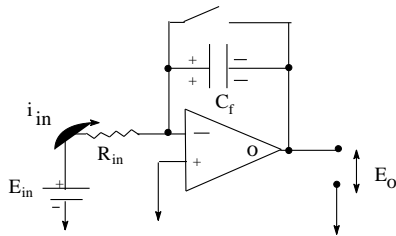CH 461 / CH 461H - Lab Quiz 1 - 2019   Name:_____

This Lab Quiz is due on Thursday 10/10/19 at 12:00 pm before lecture. It is open book, but no discussion or help about this quiz from any person is acceptable- this is independent work. Please print the pdf and complete the quiz on the hardcopy. Place numerical answers in the space provided with the proper units and significant figures given on this copy. Show all work for questions where calculations are required (i.e., provide formulas, substitutions, etc.). If you have questions on clarifications, please e-mail or ask Chris.

1.   Sketch an op-amp voltage amplifier circuit for which the amplification factor is 20, that is, $E_o = -20 \times E_{in}$. Assume $R_f = 10$ MΩ. What is the value needed for R_{in}?
      (On your sketched diagram: include E_{in} and three grounds.)

                                                                      R_{in} = _____ kΩ

2.   What value for the feedback capacitor is required in the following OA integrator circuit given that E_{in} = -0.100 V; R_{in} = 10 MΩ to produce an output voltage ramp = 0.800V/s?

                                                                      C_f = _____nF

3.   Add a 1 MΩ feedback resistor to the circuit in question 2. above and report the following:

            (a) the RC time constant τ for this circuit?   τ = _____ ms

            (b) the response time for this circuit?   = _____ ms

4.   The 2019 Nobel Prizes in the following areas were just announced.   List the names for the all the scientists awarded in each, the specific research area they are recognized for, and what Universities they are from.

 (1) Chemistry

(2) Physics

(3) Physiology or Medicine.