1. Given an ideal op-amp, what is $V_{out}/V_{in}$?

![Op-amp circuit diagram]

2. Given a typical Silicon diode, and a Vcc of 5.0 Volts:

   a. What is the voltage at the center tap?
   b. How much current flows through each resistor?
   c. How much power is dissipated by this circuit?

![Diode circuit diagram]

3. Write a C for loop that counts from 0 to 100 in steps of 5 (and reaches both 0 and 100).

4. Write C code to clear bit 5 of an 8 bit value, `val`, but leave the other bits unchanged.