1. Given an ideal op-amp, what is \( V_{\text{out}}/V_{\text{in}} \)?

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?

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.