1. Show that \((p \to q) \to r\) and \(p \to (q \to r)\) are not logically equivalent.

2. Find the sum-of-products expansion of the Boolean function \(F(w, x, y, z)\) that has the value 1 if and only if an odd number of \(w, x, y,\) and \(z\) have value 1.

3. Construct circuits from inverters, AND gates, and OR gates to produce these outputs.
   (a) \(\overline{x} + y\)
   (b) \(xyz + \overline{x}y\)
   (c) \((\overline{x} + y)(\overline{y} + z)(\overline{x} + z)\)

4. Design a circuit that implements majority voting for five individuals.

5. How many different Boolean functions \(F(x, y, z)\) are there such that \(F(\overline{x}, \overline{y}, \overline{z}) = F(x, y, z)\) for all values of the Boolean variables \(x, y,\) and \(z\)?