HW 5: Truth Tables and Circuits

1) Show the circuit and truth table for the following Boolean formulas:

a) $\mathbf{A\overline{B} + \overline{A}B}$

b) $\mathbf{\overline{X}Y\overline{Z} + \overline{XY}Z + X\overline{YZ}}$

c) $(\mathbf{A + \overline{B}})\,(\mathbf{B + \overline{C}})\,(\mathbf{C + \overline{A}})$

2) Show a truth table, a Boolean formula, and a circuit with binary inputs n_2, n_1, and n_0, such that:

1. $\boldsymbol{n} = n_2 \cdot 2^2 + n_1 \cdot 2^1 + n_0 \cdot 2^0$ and
2. $\boldsymbol{n}^3 - 8 \cdot \boldsymbol{n}^2 + 17 \cdot \boldsymbol{n} - 10 = 0.$