

1. Consider a 10-bit Analog-to-Digital Converter (ADC) with a 0-5V rating.
 - (a) Find the resolution of the ADC.
 - (b) What reading (in decimal) would be returned by the ADC for analog input voltage of 2V? Compute the corresponding voltage reported by the ADC using the resolution. How much error is in the voltage measurement?
 - (c) What readings (in decimal) would be returned by the ADC for analog input voltage of 3V? Compute the corresponding voltage reported by the ADC using the resolution. How much error is in the voltage measurement?
2. Problem 11.44a (also draw the Truth table, use a Karnaugh map to reduce expression, and realize reduced expression with two-input AND, OR and NOT gates in logic diagram).
3. Given the given truth table below:

A	B	C	F
0	0	0	0
0	0	1	1
0	1	0	1
0	1	1	0
1	0	0	0
1	0	1	1
1	1	0	0
1	1	1	1

- (a) Write a Boolean equation in sum-of-products (sum-of-minterms) form for the output F in terms of the inputs A, B, C.
 - (b) Draw a simple logic diagram for your equation from part (a) using two-input AND gates, OR gates, and NOT gates.
 - (c) Find the simplified sum-of-products (sum-of-minterms) form of the expression using a Karnaugh map.
 - (d) Draw a simple logic diagram for your equation from part (c) using two-input AND gates, OR gates, and NOT gates.
4. Problem 11.59b (draw Truth table and use Karnaugh map to reduce)