**Assignment 3**

1. Simplify the Boolean function F(A, B) = Σm(1,2,3) using a 2-variable K-map.
2. Use a 3-variable K-map to simplify F(A, B, C) = Σm(0,1,3,7).
3. Given the Boolean function F(A, B, C, D) = Σm(0, 2, 5, 7, 8, 10, 13, 15), simplify using a 4-variable K-map.
4. Minimize F(A, B, C) = Σm(1, 2, 4, 6) + don’t cares (3, 5) using a 3-variable K-map.
5. Reduce the Boolean function F(W, X, Y, Z) = Σm(0,1,2,5,6,7,8,9,10,14) using a 4-variable K-map.
6. Find the simplified expression for F(A, B, C, D) = ΠM(0, 1, 2, 4, 5, 7, 9, 12, 13, 15) in POS form using a 4-variable K-map.
7. Simplify Using a 3-Variable K-Map: Given the Boolean function:  
   F(A, B, C) = Σm(1, 2, 3, 5, 6)
8. Simplify the given function:  
   F(A, B, C, D) = Σm(0, 1, 2, 8, 10, 11, 14) + d(5, 7, 15)