1. Simplify the following Boolean functions using K-map.

   i. $F(x,y) = \sum(0,1,2,3)$

  ii. $F(x,y) = \sum(0,1,2)$

 iii. $F(a,b) = \sum(0,1)$

 iv. $F(y_1,y_2) = \sum(0,3)$

  v. $F(x_1,y_1) = \sum(1)$

 vi. $F(a,b) = \sum(1,2)$

2. Simplify the following Boolean functions using K-map.

   i. $F(x,y,z) = \sum(3,4,6,7)$

  ii. $F(a,b,c) = \sum(3,5,6,7)$

 iii. $F(x,y,z) = \sum(1,2,3,7)$

 iv. $F(x,y,z) = \sum(0,2,4,6)$

  v. $F(x,y,z) = \sum(0,1,2,4,6)$

 vi. $F(x_1,x_2,x_3) = \sum(1,2,4,6)$

 vii. $F(a,b,c) = \sum(0,1,2,3,4,5,6,7)$

3. Simplify the following Boolean functions using K-map.

    i. $F(w,x,y,z) = \sum(2,3,12,13,14,15)$

    ii. $F(a,b,c,d) = \sum(3,7,11,13,14)$

    iii. $F(w,x,y,z) = \sum(2,3,10,11,12,13,14,15)$

    iv. $F(a,b,c,d) = \sum(0,2,4,5,6,7,8,10,13,15)$

    v. $F(a,b,c,d) = \sum(0,1,2,4,5,7,11,15)$

    vi. $F(w,x,y,z) = \sum(0,1,2,4,5,6,8,9,12,13,14)$