1 Simplify the following Boolean functions, using three-variable maps:

(a) $F(x,y,z) = \Sigma(0,2,4,5)$

(b) $F(x,y,z) = \Sigma(0,2,4,5,6)$

(c) $F(x,y,z) = \Sigma(0,1,2,3,5)$

(d) $F(x,y,z) = \Sigma(1,2,3,7)$

2 Simplify the following Boolean functions, using four-variable maps:

(a) $F(w, x, y, z) = \Sigma(1, 4, 5, 6, 12, 14, 15)$

(b) $F(A, B, C, D) = \Sigma(2, 3, 6, 7, 12, 13, 14)$

(c) $F(w, x, y, z) = \Sigma(1, 3, 4, 5, 6, 7, 9, 11, 13, 15)$

(d) $F(A, B, C, D) = \Sigma(0, 2, 4, 5, 6, 7, 8, 10, 13, 15)$

3 Find the minterms of the following Boolean expressions by first plotting each function in a map:

(a) $xy + yz + xy'z$

(b) $C'D + ABC' + ABD' + A'B'D$

(c) $wyz + w'x' + wxz'$

(d) $A'B + A'CD + B'CD + BC'D'$