

2.91 A system has three outputs, all of which must be produced at the same time from four inputs as described by the functions given. Find an economical SOP representation of each output assuming all three outputs will be manufactured in the same overall circuit. Draw the circuit at the gate level.

$$F_A(W, X, Y, Z) = \sum m(2, 7) + \sum d(1, 3, 5, 6, 9, 10, 13)$$

$$F_B(W, X, Y, Z) = \sum m(0, 1, 2, 10) + \sum d(3, 5, 8, 9)$$

$$F_C(W, X, Y, Z) = \sum m(0, 6, 13, 15) + \sum d(1, 2, 7, 9)$$

$$F_A(W, X, Y, Z)$$

		YZ			
	WX	00	01	11	10
00		0	1	3	2
01		4	5	7	6
11		12	13	15	14
10		8	9	11	10

$$F_B(W, X, Y, Z)$$

		YZ			
	WX	00	01	11	10
00		0	1	3	2
01		4	5	7	6
11		12	13	15	14
10		8	9	11	10

$$F_C(W, X, Y, Z)$$

		YZ			
	WX	00	01	11	10
00		0	1	3	2
01		4	5	7	6
11		12	13	15	14
10		8	9	11	10