Truth Table
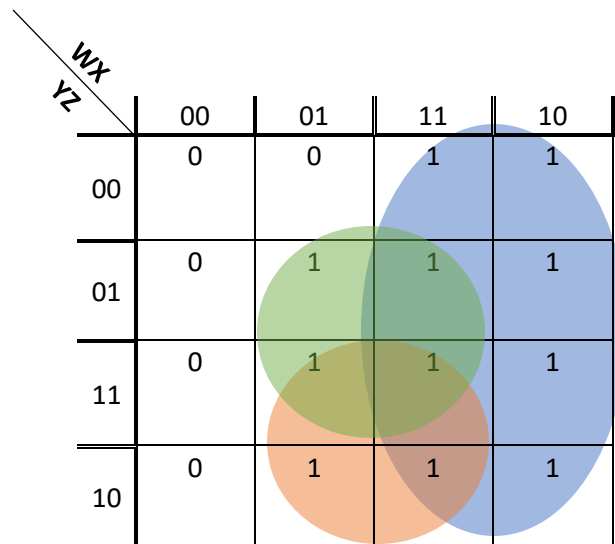
W Sensor 1 (high priority)	X Sensor 2 (low priority)	Y Sensor 3 (redundant 1)	Z Sensor 4 (redundant 2)	F Output
1	1	1	1	1
1	1	1	0	1
1	1	0	1	1
1	1	0	0	1
1	0	1	1	1
1	0	1	0	1
1	0	0	1	1
1	0	0	0	1
0	1	1	1	1
0	1	1	0	1
0	1	0	1	1
0	1	0	0	0
0	0	1	1	0
0	0	1	0	0
0	0	0	1	0
0	0	0	0	0

K-Map and SoP

WX \ YZ	00	01	11	10
00	0	0	1	1
01	0	1	1	1
11	0	1	1	1
10	0	1	1	1

Minimum Sum of Products

F = W + XZ + XY