

1.) Truth Table:

W	X	Y	Z	F
0	0	0	0	1
0	0	0	1	0
0	0	1	0	0
0	0	1	1	1
0	1	0	0	0
0	1	0	1	1
0	1	1	0	1
0	1	1	1	0
1	0	0	0	0
1	0	0	1	1
1	0	1	0	1
1	0	1	1	0
1	1	0	0	1
1	1	0	1	0
1	1	1	0	0
1	1	1	1	1

2.) Sum of products:

$$F = (W'X'Y'Z') + (W'X'YZ) + (W'XY'Z) + (W'XYZ') + (WX'Y'Z) + (WX'YZ') \\ + (WXY'Z') + (WXYZ)$$

3.) Products of sums:

$$F = (W+X+Y+Z').(W+X+Y'+Z).(W+X'+Y+Z).(W+X'+Y'+Z').(W'+X+Y+Z) \\ .(W'+X+Y'+Z').(W'+X'+Y+Z).(W'+X'+Y'+Z)$$

4.) Simplification: Not possible.