

1) $f(x,y,z) = xy'z + x'y'z + xyz$

x	y	z	$f(x,y,z)$	$xy'z$	$x'y'z$	xyz
0	0	0	0	0	0	0
0	0	1	1	0	1	0
0	1	0	0	0	0	0
0	1	1	0	0	0	0
1	0	0	0	0	0	0
1	0	1	1	1	0	0
1	1	0	0	0	0	0
1	1	1	1	0	0	1

3)

f

$$f(x,y,z) = xy'z + x'y'z + xyz$$

$$= xy'z + xyz + x'y'z \text{ (commutative)}$$

$$= xz(y' + y) + x'y'z \text{ (distributive)}$$

$$= xz + x'y'z \text{ (Inverse+identity)}$$

$$= z(x + x'y') \text{ (distributive)}$$

$$= z((x + x')(x + y')) \text{ (distributive AND)}$$

$$= z(x + y') \text{ (Inverse + identity)}$$

4)

x	y	z	$F(x,y,z) = z(x+y')$	$x+y'$
0	0	0	0	1
0	0	1	1	1
0	1	0	0	0
0	1	1	0	0
1	0	0	0	1
1	0	1	1	1
1	1	0	0	1
1	1	1	1	1

