

2.1 (b)

$x y z$	$(xy + z)$	$(x + z)$	$(y + z)$	$(x + z)(y + z)$
0 0 0	0	0	0	0
0 0 1	1	1	1	1
0 1 0	0	0	1	0
0 1 1	1	1	1	1
1 0 0	0	1	0	0
1 0 1	1	1	1	1
1 1 0	1	1	1	1
1 1 1	1	1	1	1

2.3 (a) $A'B'C + AB'C + BC = B'C + BC = C$

(b) $x'y'z' + y'z = y'(x'z' + z) = y'(x' + z) = x'y' + y'z$

(c) $(x + y)(x' + y') = x'y'(x' + y') = x'y'$

(d) $x'y'z' + w'x'yz' + wx'yz' = x'z'(y' + w'y) + wx'yz' = x'z'(y' + w'y + wy) = x'z'$

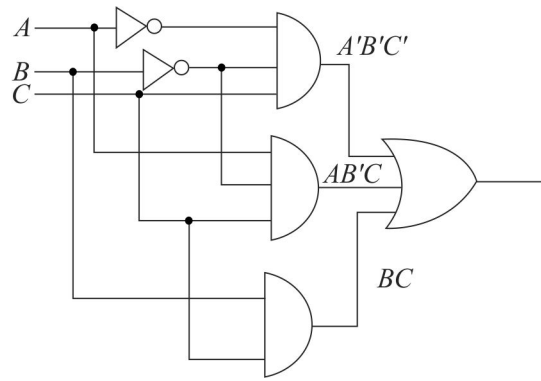
(e) $(BC' + A'D)(AB' + CD') = BC'AB' + BC'CD' + A'DAB' + A'DCD' = 0$

(f) $(a + c)(a' + b + c)(a' + b' + c) = (ab + ac + a'c + bc + c)(a' + b' + c)$
 $= (ab + c)(a' + b' + c) = abc + a'c + b'c + c$
 $= abc + c(a' + b' + 1)$
 $= c$

2.4 (a) $A'C' + ABC + AC = A'C' + AC(B + 1) = A'C' + AC = (A \text{ XNOR } C)$

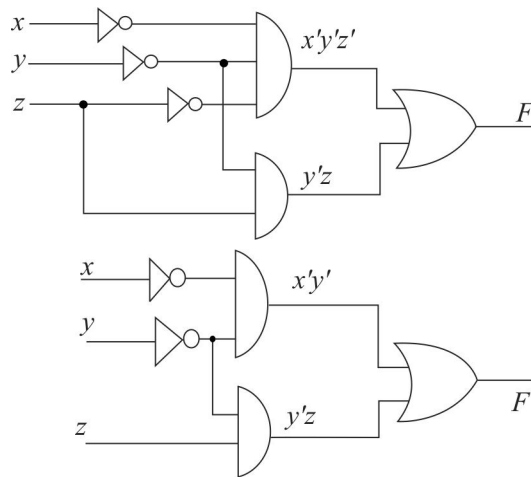
(d) $(A' + C)(A' + C')(A + B + C'D) = (A' + CC')(A + B + C'D)$
 $= A'(A + B + C'D) = AA' + A'B + A'C'D = A'(B + C'D)$

2.6 (a) $A'B'C + AB'C + BC = C$

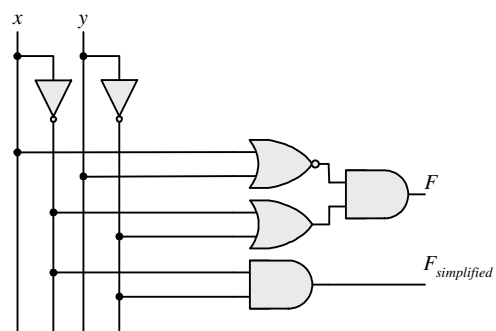


Simplified diagram is same as 2.6 (f) simplified diagram, $F = C$.

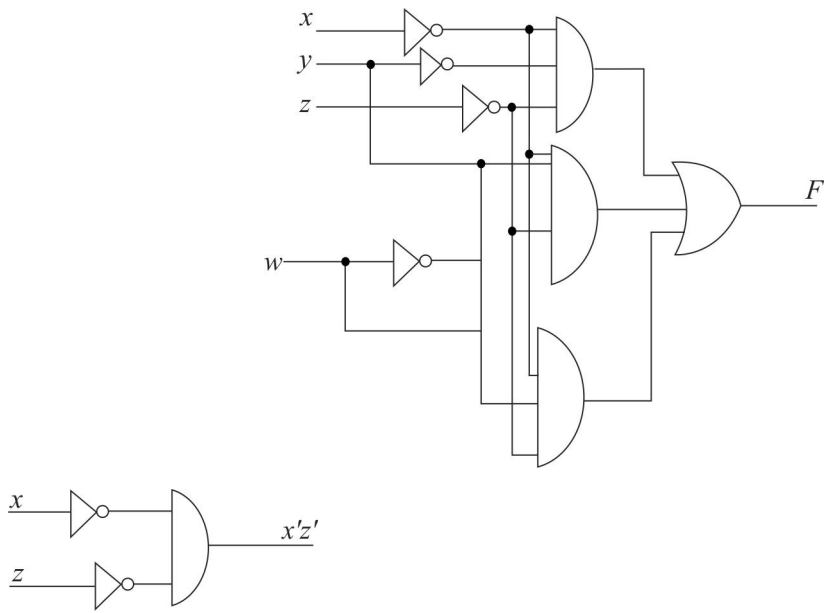
(a) $x'y'z' + y'z = x'y' + y'z = F$



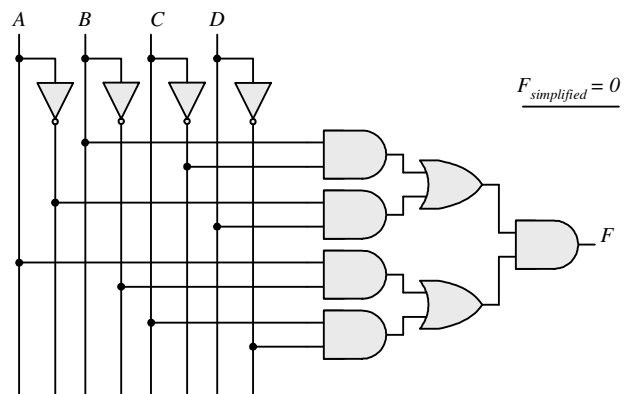
(c)



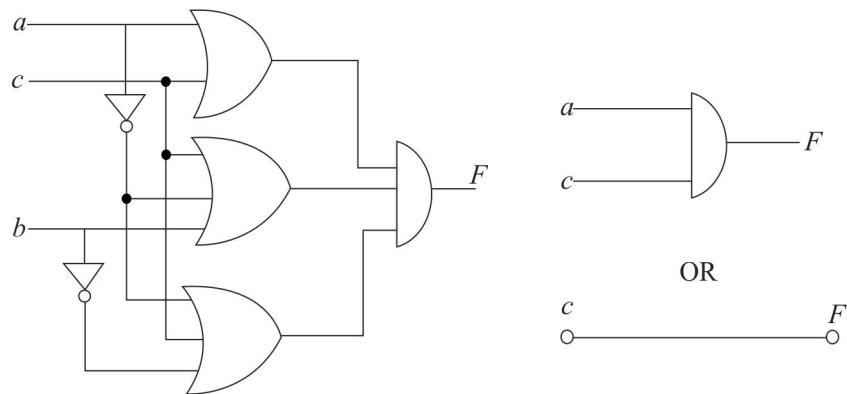
(d) $x'y'z' + w'x'yz' + wx'yz' = x'z' = F$



(e)



(f) $(a + c)(a' + b + c)(a' + b' + c) = C = F$



$$\mathbf{2.15} \quad T_1 = A'BC' + A'BC + AB'C' + AB'C = A'B + AB' = A \oplus B$$

$$T_2 = A'B'C' + A'B'C + ABC' + ABC = A'B' + AB = (A \oplus B)'$$