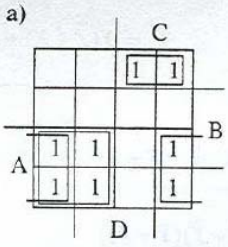
ELEC 204
HW#3 Solutions

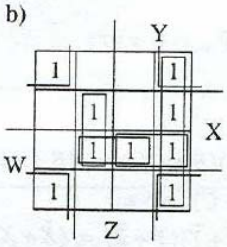
2-16.

a)



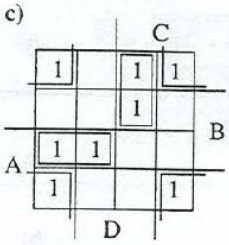
$A\bar{C} + A\bar{D} + \bar{A}\bar{B}C$

b)



$Y\bar{Z} + \bar{X}\bar{Z} + X\bar{Y}Z + (WXZ \text{ or } WXY)$

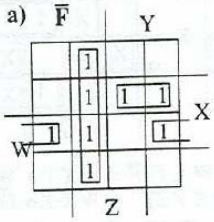
c)



$\bar{B}\bar{D} + AB\bar{C} + \bar{A}CD$

2-21.

a) $\bar{F}$

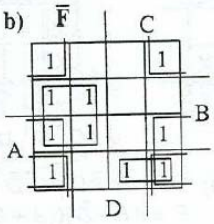


$\bar{F} = \Sigma m(1, 5, 6, 7, 9, 12, 13, 14)$

$F = \overline{\bar{Y}Z + WX\bar{Z} + \bar{W}XY}$

$F = (Y + \bar{Z})(\bar{W} + \bar{X} + Z)(W + \bar{X} + \bar{Y})$

b) $\bar{F}$



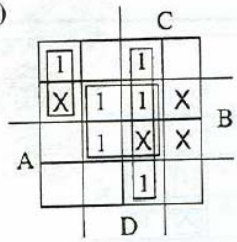
$\bar{F} = \Sigma m(0, 2, 4, 5, 8, 10, 11, 12, 13, 14)$

$F = \overline{B\bar{C} + \bar{B}\bar{D} + A\bar{D} + A\bar{B}C}$

$F = (\bar{B} + C)(B + D)(\bar{A} + D)(\bar{A} + B + \bar{C})$

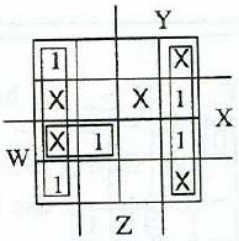
2-24.

a)



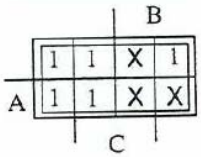
$F = \bar{A}\bar{C}\bar{D} + BD + CD$

b)



$F = WX\bar{Y} + (\bar{Y}\bar{Z} + Y\bar{Z}) \text{ or } (\bar{X}\bar{Z} + X\bar{Z})$

c)



$F = 1$

2-27.

a) $F = A\bar{B}C + \bar{A}BC + A\bar{B}D + \bar{A}BD$

$X_1 = A\bar{B}$

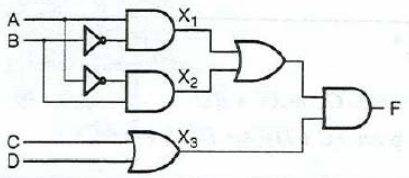
$X_2 = \bar{A}B$

$F = X_1C + X_1D + X_2C + X_2D$

$= (X_1 + X_2)(C + D)$

$X_3 = C + D$

$F = (X_1 + X_2)X_3$



b) $F = WY + XY + \bar{W}XZ + W\bar{X}Z$

$= (W + X)Y + (\bar{W}X + W\bar{X})Z$

$= (W + X)Y + (W + X)(\bar{W} + \bar{X})Z$

$X_1 = W + X$

$F = X_1Y + X_1(\bar{W} + \bar{X})Z$