Lista de Exercícios
Formas Padrão das Funções Lógicas – Mintermos e Maxtermos

Disciplina: Lógica de Predicados	**Semestre Letivo:** 2014/2
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1. Expressar as funções a seguir na forma de Mintermos e Maxtermos:

a) $F(a,b,c) = (a'.c)+(b.c')$
$= a'.c.(b+b') = a'.b.c + a'.b'.c$
$= b.c'.(a+a') = a.b.c' + a'.b.c'$

$F(a,b,c) = a'.b.c + a'.b'.c + a.b.c' + a'.b.c'$
      0 1 1   0 0 1   1 1 0   0 1 0
         3   1   6   2

$F(a,b,c) = \Sigma (1,2,3,6)$

$F(a,b,c) = \pi (0,4,5,7)$
$F(a,b,c) = (a + b + c).(a' + b + c).(a' + b + c').(a' + b' + c')$

b) $F(a,b,c) = abc + b'c + a'c + b'c'$
$= b'.c.(a+a') = a.b'.c + a'.b'.c$
$= a'.c.(b + b') = a'.b.c + \text{a'.b'.c}$
$= b'.c'.(a + a') = a.b'.c' + a'.b'.c'$
$F(a,b,c) = a.b.c + a.b'.c + a'.b'.c + a'.b.c + a.b'.c' + a'.b'.c'$
        1 1 1   1 0 1   0 0 1   0 1 1   1 0 0   0 0 0
           7   5   1   3   4   0
$F(a,b,c) = \Sigma(0,1,3,4,5,7)$

$F(a,b,c) = \pi (2,6)$
$F(a,b,c) = (a+b'+c).(a'+b'+c)$

c) $F(a,b,c) = (a'bc)+(a'b)+(b'c)+(b'c')$
$=a'b.(c+c') = \text{a'.b.c} + a'.b.c'$
$=b'.c.(a+a') = a.b'.c + a'.b'.c$
$=b'.c'.(a+a') = a.b'.c' + a'.b'.c'$
$F(a,b,c) = a'.b.c + a'.b.c' + a.b'.c + a'.b'.c + a.b'.c' + a'.b'.c'$
         0 1 1   0 1 0   1 0 1   0 0 1   1 0 0   0 0 0
            3   2   5   1   4   0
$F(a,b,c) = \Sigma(0,1,2,3,4,5)$

$F(a,b,c) = \pi (6,7)$
$F(a,b,c) = (a'+b'+c).(a'+b'+c')$

d) $F(a,b,c) = a'.(b'+c).(a'+b)$
$= a' + bb' = (a' + b).(a'+ b')$
      $=a' + b + c.c' = (a'+b+c).(a'+b+c')$
      $=a' + b' + c.c' = (a'+b'+c).(a'+b'+c')$
$= b'+c+a.a' = (a+b'+c).\text{(a'+b'+c)}$
$= a'+b+c.c' = \text{(a'+b+c).(a'+b+c')}$

F(a,b,c) = (a'+b+c).(a'+b+c').(a'+b'+c).(a'+b'+c').(a+b'+c)
          1 0 0   1 0 1   1 1 0   1 1 1   0 1 0
            4   5   6   7   2

F(a,b,c) = π(2,4,5,6,7)

F(a,b,c) = Σ (0,1,3)
F(a,b,c) = a'.b'.c' + a'.b'.c + a'.b.c