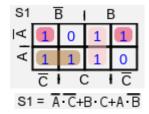


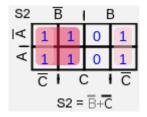
## Universidade Federal da Fronteira Sul Curso de Ciência da Computação Disciplina: Circuitos Digitais

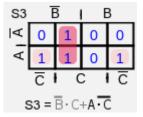
Disciplina: Circuitos Digitais Professor: Luciano L. Caimi

1) Determine as expressões simplificadas S1, S2 e S3 a partir da tabela verdade mostrada abaixo:

| Α | В | С | S <sub>1</sub> | S <sub>2</sub> | S <sub>3</sub> |
|---|---|---|----------------|----------------|----------------|
| 0 | 0 | 0 | 1              | 1              | 0              |
| 0 | 0 | 1 | 0              | 1              | 1              |
| 0 | 1 | 0 | 1              | 1              | 0              |
| 0 | 1 | 1 | 1              | 0              | 0              |
| 1 | 0 | 0 | 1              | 1              | 1              |
| 1 | 0 | 1 | 1              | 1              | 1              |
| 1 | 1 | 0 | 0              | 1              | 1              |
| 1 | 1 | 1 | 1              | 0              | 0              |

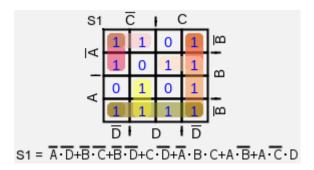


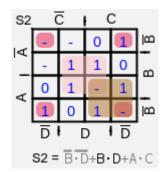


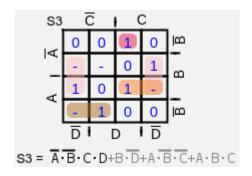


2) Determine as expressões simplificadas S1, S2 e S3 a partir da tabela verdade mostrada abaixo. Considere o 'X' como "d'ont care", podendo assumir o valor '0' ou '1' conforme for mais adequado:

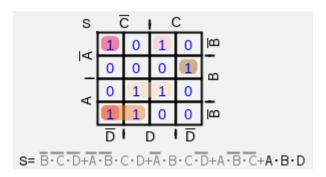
| Α | В | С | D | S1 | S2 | S3 |
|---|---|---|---|----|----|----|
| 0 | 0 | 0 | 0 | 1  | X  | 0  |
| 0 | 0 | 0 | 1 | 1  | X  | 0  |
| 0 | 0 | 1 | 0 | 1  | 1  | 0  |
| 0 | 0 | 1 | 1 | 0  | 0  | 1  |
| 0 | 1 | 0 | 0 | 1  | X  | X  |
| 0 | 1 | 0 | 1 | 0  | 1  | X  |
| 0 | 1 | 1 | 0 | 1  | 0  | 1  |
| 0 | 1 | 1 | 1 | 1  | 1  | 0  |
| 1 | 0 | 0 | 0 | 1  | 1  | X  |
| 1 | 0 | 0 | 1 | 1  | 0  | 1  |
| 1 | 0 | 1 | 0 | 1  | X  | 0  |
| 1 | 0 | 1 | 1 | 1  | 1  | 0  |
| 1 | 1 | 0 | 0 | 0  | 0  | 1  |
| 1 | 1 | 0 | 1 | 1  | 1  | 0  |
| 1 | 1 | 1 | 0 | 1  | 1  | X  |
| 1 | 1 | 1 | 1 | 0  | X  | 1  |



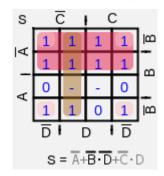




- 3) Simplifique as expressões usando mapa de Karnaugh
- a)  $S = \overline{A}.B.C.\overline{D} + \overline{A}.\overline{B}.C.D + \overline{A}.\overline{B}.\overline{C}.\overline{D} + A.B.\overline{C}.D + A.\overline{B}.\overline{C}.D + A.B.C.D + A.\overline{B}.\overline{C}.\overline{D}$



b)  $S = \overline{B}.\overline{D} + \overline{A} + A.\overline{B}.\overline{C}.D + A.\overline{B}.C.D + \overline{A}.\overline{C}$ 



c) S(A, B, C) = SOMA(m1, m3, m4, m5, m7)

