

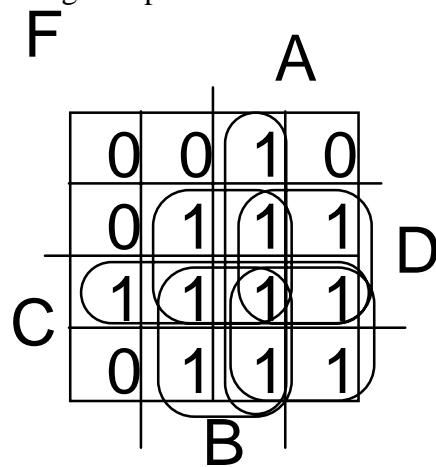
ECE 376
Spring 2000
Karnaugh Map
SOP & POS
Don't Cares

Consider the 4 bit binary number ABCD

Determine a minimal SOP logic function based on the digits A,B,C, and D that indicates which of the 16 entries has 2 or more of the digital bits equal to one

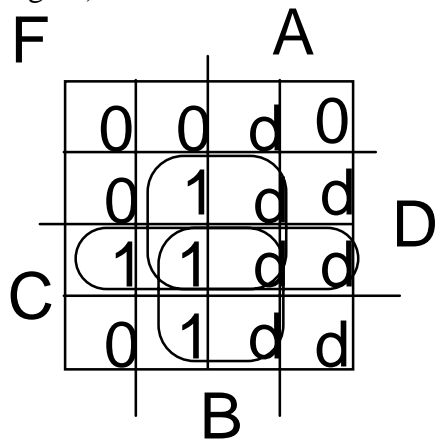
A	B	C	D	F
0	0	0	0	0
0	0	0	1	0
0	0	1	0	0
0	0	1	1	1
0	1	0	0	0
0	1	0	1	1
0	1	1	0	1
0	1	1	1	1
1	0	0	0	0
1	0	0	1	1
1	0	1	0	1
1	0	1	1	1
1	1	0	0	1
1	1	0	1	1
1	1	1	0	1
1	1	1	1	1

A) Place this info into a Karnaugh Map



$$F = AB + AC + AD + BC + BD + CD$$

B) Now suppose that we care only about the digits 0 through 9, using "DON'T CARES" for 10 through 15 (or A through F).



$$F = BC + BD + CD$$

