

SHOW YOUR WORK

- 1) EXPAND THE FOLLOWING EXPRESSIONS INTO CANONICAL FORM BY USING APPROPRIATE BOOLEAN LAWS!

$$a) f(A, B, C) = A\bar{B}C + AB + BC + \bar{A}B\bar{C}$$

$$b) h(X, Y, Z) = (X+Y)(\bar{X}+\bar{Y}+Z)(Y+\bar{Z})(\bar{X}+Y+\bar{Z})$$

- 2) PLACE EACH FUNCTION BELOW INTO A CANONICAL TRUTH TABLE. MINIMIZE USING THE TRUTH TABLE AND THE PRINCIPLE OF ADJACENCY, I.E. IDENTIFY ADJACENT TERMS & ELIMINATE TERMS THAT DON'T MATTER.

$$a) Q(a, b, c) = \sum m(1, 2, 4, 5, 6)$$

$$b) W(a, b, c) = a\bar{b}c + \bar{a}b\bar{c} + ab\bar{c} + a\bar{b}c + a\bar{b}c$$

- 3) PLACE THE FUNCTIONS FROM PROBLEM 2 INTO K-MAPS, LOOP OUT, & WRITE THE SOP REDUCED FUNCTION. CLEARLY INDICATE WHICH LOOP IS ASSOCIATED ITS RESPECTIVE PRODUCT TERM,

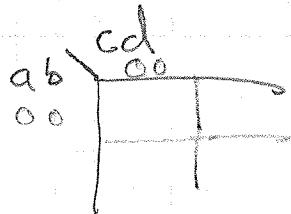
- 4) MINIMIZE THE FOLLOWING FUNCTIONS USING K-MAPS. PLACE THE VARIABLES ON THE K-MAP AXES IN ALPHABETIC ORDER* LIKE WE DID IN CLASS. LOOP OUT AND WRITE THE REDUCED FUNCTION IN SOP FORM.

$$a) V(a, b, c, d) = \sum m(0, 4, 5, 7, 8, 9, 13, 15)$$

$$b) T(w, x, y, z) = yz + \bar{w}\bar{x}y + wx\bar{y}z + \bar{x}\bar{y}z + wx\bar{y}\bar{z} + x\bar{y}\bar{z}$$

- 5) READ SECTIONS 4.2, 4.3 (AND 4.1 IF YOU HAVEN'T).

* NOTE: THE TEXT BOOK PUTS VARIABLES IN A DIFFERENT ORDER THAN I DID IN CLASS. UNIFORMITY MAKES



DO IT
THIS
WAY

IT EASIER FOR US TO
DISCUSS THE PROBLEMS
& RESULTS.