

University of New Brunswick

Computer Science

Logic Synthesis

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ASSIGNMENT 11

Problem 1. Reduce the number of literals in the following expression by factoring with product terms:

$$F = ac + ad + ag + bc + bd + be + bf + ce + cf + df + dg$$

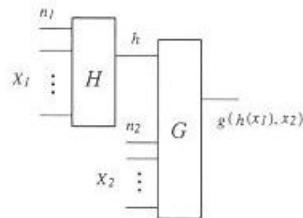
Problem 2. Reduce the total number of literals in the following expressions by using the common divisor:

$$F = ade \vee bde \vee cde \vee f$$

$$G = bg \vee cg \vee dg \vee aef$$

Problem 3. Can the network structure shown below realize the following function? Show your work!

$$f = x_3x_4 \vee x_1x_3 \vee x_2\bar{x}_3 \vee \bar{x}_1\bar{x}_2x_3\bar{x}_4$$



Problem 4. Simplify the circuit below by using local transformations.

