

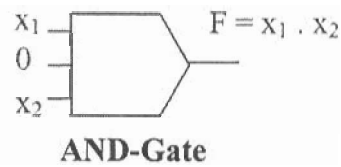
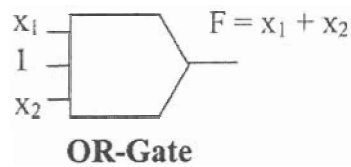


Worksheet 8 EEL 4705

Emerging Logic Devices – AND/OR Mapping

Group #: |

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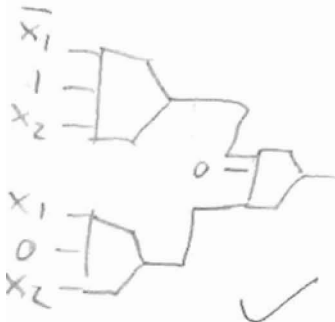


Question: Convert the following Boolean Logic expressions into equivalent Majority Gate Logic by using AND/OR mapping method demonstrated previously making use of the AND and OR forms as indicated above.

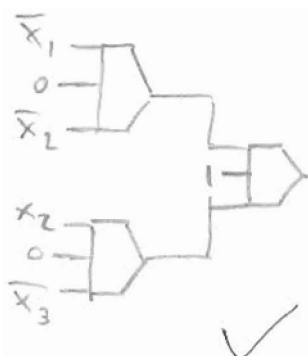
Use the method to first perform a direct AND/OR mapping of the expression. Then see if the expression can be further reduced to a simpler logic form and perform an AND OR mapping of the reduced expression.

Example: $n = x_1 \overline{x_2} + \overline{x_2} x_3$ can be further reduced to $n = (x_1 + x_3) \overline{x_2}$. Similarly, for all the equations below perform the AND/OR mapping for the original expression and the reduced form of the expression.

(a) $n = (\overline{x_1} + x_2) \cdot (x_1 \cdot x_2) = (\overline{x_1} x_1 x_2 + x_2 \cdot x_1 x_2) = 0 + x_2 \cdot x_1 = x_2 \cdot x_1$



(b) $n = \overline{x_1} x_3 + x_2 \overline{x_3} = (\overline{x_1} + x_2) \overline{x_3}$



reduced:

