**Experiment 4 – Kmaps**

**CSCI 220 – Section 1**

**Lab Date: 2/17/2016**

Report By:

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On my honor I have neither received nor given aid on this report.

Signed: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Part I  
Objective of the Experiment**

To become familiar with the use of kmaps, minimization, and don't care cases.

**Part II  
Equipment/components necessary for the Experiment**

1 7432 2-input OR chip

1 7408 2-input AND chip

**Part III  
Description of the followed procedure**

**(Truth table, Circuit design, etc.)**

The equation we were originally given was represented as a sum of minterms and a sum of don't-cares. I have included my prelab in this report to show how i used the kmap to reduce the function to:

F(A,B,C) = AB + BC + AD

Truth Table:



Gate diagram for function F(A,B,C) = AB + BC + AD:



There are three don't care cases in this function: 0000, 1011, and 1101. The outputs for those cases are 0, 1, and 1 respectively. These are the outputs because i picked them when reducing the equation with the kmap. By marking the don't care cases on the kmap i can see what those values would need to be to get the simplest version of the equation.

**Part IV  
Conclusion**

With this function we reduced it by changing the output of the don't care cases. Because those cases can be either one or zero we can use a kmap to tell what those values need to be to get the simplest equation. The circuit we built worked fine and when tested against the truth table all cases were correct.