Discrete Maths Quiz

Name _____

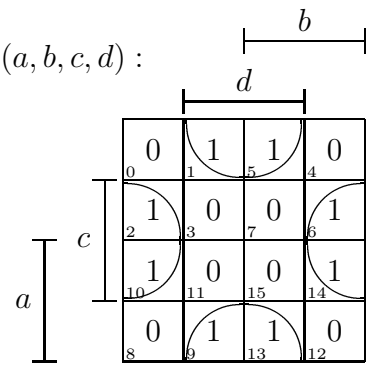
Professor _____

1. Prove that $3^{3^{3^{3^{3}}}} \equiv 7 \mod 10$.

2. Prove, by means of set inclusion, that $(A \setminus B) \cup (B \setminus A) = (A \cup B) \setminus (A \cap B)$.

3. Write the truth table for the proposition $\neg p \implies (q \wedge r)$, if p, q, r are propositions.

4. Demonstrate that $\displaystyle\sum_{1 \le k \le n} \binom{n}{k}^2 = \binom{2n}{n}$.

5. Write out a SOP for the Karnaugh map

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