ESS418 Research Methods in Social Science

Assignment 1: Qualitative Comparative Analysis

**Submit due to: 30. 11. 2015**

**Student´s name:**

1. What distinguished set-theoretical methods from non-set-theoretical methods?
2. In fuzzy set analysis, a truth table is produced based on fuzzy data. What does it mean when we say that a given truth table row contains x number of cases?
3. Perform Boolean multiplication for the following pairs of expressions and simplify

the result:

1. (A + B) and (A \* B)
2. (A + B) and (A + B + C)
3. (A \* B) and (~A \* ~B)
4. (A \* (B+C)) and (B \* (~A+C))
5. A case has a membership of 1 set A, 0 in set B, 0.6 in set C, 0.9 in set D, and 0.1 in set E. Calculate its membership in the following Boolean expressions:

a) (A + B + D)

b) (A\*B) + (C\*~D)

c) ~(A\*~B + ~C + D\*E)

d) ~((A\*~B + ~C) + (D\*E))

1. Minimize the following primitive expressions. Are there any logically redundant

prime implicants?

(A~B~C) + (A~BC) + (~A~B~C) + (~AB~C).

~B~C+ A~B + ~ AB ~ C