07.11.2013

DISCRETE MATHEMATICS MIDTERM EXAM

1) (30pts) Prove that n < n+1 with any proof method for all positive integers n.

2) (30pts) There is a Boolean expressiom given below.

a) Draw the logic gastes figure of the expression.
b) Simplify the expression.
c) Draw the logic gastes figure of the simplified expression.

$$xyz + xy\bar{z} + xy + xyz + \bar{x}yz$$

3) (40 pts) Prove that $1.2 + 2.3 + \cdots + n(n+1) = n(n+1)(n+2)/3$ for all positive integers n.

You have 60 minutes, good luck