CS256 - Winter 2009 - Assignment #6

1. [20 points] Problem 3.5(a). Use Rule NWAIT (Fig 3.6).

2. [20 points] Construct a WAIT diagram for the overtaking property of:

(i) Problem 3.5(a)

(ii) Problem 3.7

Don't show or prove the VCs.

Please note that for the problems above, you can make use of (correct) invariants about programs MUX-DEK and/or MUX-BAK-A from previous homeworks. You can also prove additional invariants apart from the diagrams / NWAIT formulas if you need to, but if you do, please say what they are and give the proofs.

3. [30 points] Compute ω-automata (Muller and Streett) and an ω-regular expression for each of the following LTL formulas (nine answers total):

(i) $\Box(\neg p \vee \Diamond q)$

(ii) $\Box\neg p \vee \Diamond q$

(iii) $\Box\neg p \ \rightarrow \ \Box\Diamond q$