Every exercise is 10 points. The students have to deliver their work by 10th of October (17:00) at the secretary office of the Formal Methods Group H.G. 7.22

Exercise 1 Consider the following model:

Using the algorithm model check the LTL formula: \((\Box p) \cup q\).

Exercise 2 Consider the following model:

For each state of this model, check the validity of the CTL formula: \(E((p \land q) \lor r) \cup E(r \lor AGp)\) using the labeling algorithm.

Exercise 3 Give the corresponding modal \(\mu\)-calculus formula \(f\) of the CTL formula: \(AX EX (\neg q \land E(p \lor q))\)

2) Consider the following model:

Compute \([f]\) using the iterative evaluation of the fixpoints.