Exercises for “Formal Specification and Verification”
Exercise sheet 9

Exercise 9.1:
Prove the following equivalences of CTL formulae:

1. \( \neg A \diamond F \equiv E \Box \neg F \)
2. \( \neg E \diamond F \equiv A \Box \neg F \)
3. \( \neg A \bigcirc F \equiv E \bigcirc \neg F \)
4. \( E(F \cup G) \equiv G \lor (F \land E \bigcirc E(F \cup G)) \)
5. \( E \Box F \equiv \phi \land E \bigcirc E \Box F \)
6. \( \neg A(F \cup G) \equiv E(\neg G \cup (\neg F \land \neg G)) \lor E \Box \neg G \)

Please submit your solution until Tuesday, January 4, 2021 at 17:00. Please do not forget to write your name on your solution.

Submission possibilities:

- Unter Homework 09 in OLAT
- By e-mail to sofronie@uni-koblenz.de with the keyword “Homework FSV” in the subject.