



Description Logics

Winter Semester 2016

Exercise Sheet 13

30th January 2017

PD Dr.-Ing. habil. Anni-Yasmin Turhan & İsmail İlkan Ceylan

Exercise 13.43 Suppose that there exists a fair coin, and that you toss it four times:

- (a) What is the probability of observing exactly four tails: TTTT?
- (b) What is the probability of observing T^*T^* where $*$ can be H or T?
- (c) What is the probability of observing at least three heads?
- (d) What is the probability of observing at least three heads provided that you have observed two heads?

Exercise 13.44 Let A, B, C be three events with $\Pr(A) = 0.3$, $\Pr(B) = 0.4$, $\Pr(C) = 0.6$ and let A, B, C be probabilistically independent.

- (a) What is the probability of $\Pr(A \cup B)$?
- (b) What is the probability of $\Pr(A \cup B \cup C)$?

Exercise 13.45 Let C be a Prob- \mathcal{EL} concept. Give a translation of C to an equivalent Prob-FO formula.