

DM549, DS(K)820, MM537, and DM547

Exercise Sheet 3 (Week 38-1)

Before the session

Solve the following exercises (you are welcome to do so in your study group):

1. What operators out of \Rightarrow , \Leftarrow , and \Leftrightarrow can “?” be replaced with to obtain a tautology?

- (a) $\neg(p \wedge q) \text{ ? } (p \vee q)$
- (b) $(p \vee q) \wedge (p \vee r) \text{ ? } p \vee (q \wedge r)$
- (c) $\neg p \Rightarrow q \text{ ? } \neg q \Rightarrow p$

2. Section 1.4:

- Exercise 16
- Exercise 54
- Exercise 62

3. Section 1.5:

- Exercise 52*

Note: The star means that this is a difficult exercise. Even though it is not stated in the exercise, you may also use the propositional function $x = y$ for x and y in the domain.

During the session

Solve the following exercises in your study group:

1. Section 1.5:

- Exercise 9 a, b
- Exercise 19 a, b
- Exercise 27 a, b, c
- Exercise 30 b
- Exercise 39 a

2. Time for the Kahoot!

3. Section 1.7:

- Exercise 1
- Exercise 18