

Exercise 5

NTNU

TDT4165 fall 2018

Theory solutions

1 c

2 d

3 d

4 c

5

6 d

7 b

8 a

The scope of `a` is global, but it is a different namespace from the `a` in the type signature and in the function. It is not possible to reference it in the function without renaming the first or last identifier, because when `a` is found as a parameter, the compiler will not look for an `a` in other namespaces.

9 The three name functions are in different namespaces, called by the identifier the namespace is bound to.

10 b

11 a

12 c

13 a

14 b

15 Examples of negative aspects: Slow for big numbers, since you have to convert back and forth between integers and natural numbers. High space- and time complexity. Pushes the problem to be dealt with elsewhere (in our code, `fromInteger` is partial)

Examples of positive aspects: Does not compile if we try to pass a negative number to a function that is only defined for natural numbers. Gives us a opportunity to limit the partiality to one small part of the code (e.g. if we have several functions that are only defined for nats).