

CS380: Modern Functional Programming
Prof. Richard Eisenberg
Spring 2017
Parametricity

For each of the problems below, write a total function with the given type. If this is impossible, explain why.

1. $ex1 :: a \rightarrow b \rightarrow b$

7. $ex7 :: (a \rightarrow a) \rightarrow a \rightarrow a$

2. $ex2 :: a \rightarrow a \rightarrow a$

8. $ex8 :: [a] \rightarrow [a]$

3. $ex3 :: Int \rightarrow a \rightarrow a$

9. $ex9 :: (a \rightarrow b) \rightarrow [a] \rightarrow [b]$

4. $ex4 :: Bool \rightarrow a \rightarrow a \rightarrow a$

10. $ex10 :: Maybe a \rightarrow a$

5. $ex5 :: Bool \rightarrow Bool$

11. $ex11 :: a \rightarrow Maybe a$

6. $ex6 :: (a \rightarrow a) \rightarrow a$

12. $ex12 :: Maybe a \rightarrow Maybe a$