Polymorphic Type Inference Review Problems

CSE505

November 27, 2001

Determine the (principal) types of the following expressions (using the Hindley-Milner algorithm), or say how the algorithm fails:

a. $\lambda x.\lambda y.\lambda z.((x\ z)\ (y\ z))$

b. let f = λx. (if x then x else f(1)) in f(0)

c. $\lambda x.(x\ x)$

d. λ f. λx. if x then f(x) else f(0)+1

e. let f = $\lambda z.0$ in λx. if x then f(x) else f(0)+1