

CS320 Programming Languages

Exercise #7

Draw type derivations of the following expressions.

1. $(\lambda(x : \text{num}, y : \text{num}).x + y)(8)$
2. $(\text{if false } (\lambda(x : \text{num}).x) (\lambda(y : \text{num}).2))(57)$
3. $(\lambda(x : \text{num}, y : \text{num} \rightarrow \text{bool}).y(x + 17))(42, \lambda(x : \text{num}).x > 72)$
where the type of $>$ is $(\text{num}, \text{num}) \rightarrow \text{bool}$