

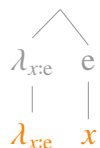
# LING4400: Drills 1

## Practice 1.1:

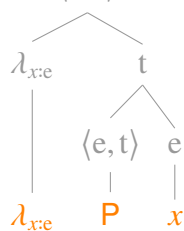
Assuming variables  $x$  and  $y$  and constant  $A$  are of type  $e$ , constants  $P$  and  $Q$  are of type  $\langle e, t \rangle$  and constant  $R$  is of type  $\langle e, \langle e, t \rangle \rangle$ , draw derivation trees that identify the type of each of the following:

1. [2 pts.]  $\lambda_{x:e} x$
2. [2 pts.]  $\lambda_{x:e} P x$
3. [2 pts.]  $P x$
4. [2 pts.]  $R x$
5. [2 pts.]  $(\lambda_{x:e} P x) y$
6. [2 pts.]  $R A A$
7. [2 pts.]  $\lambda_{x:e} R x A$
8. [2 pts.]  $\lambda_{y:e} \lambda_{x:e} R y x$
9. [2 pts.]  $\lambda_{x:e} \text{And } (P x) (Q x)$

1.  $\langle e, e \rangle$



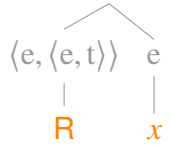
2.  $\langle e, t \rangle$



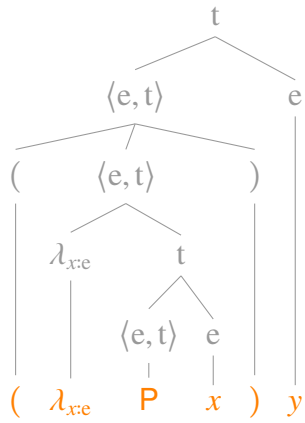
3.



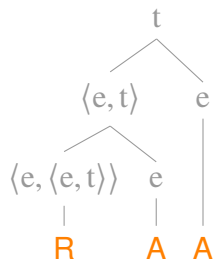
4.  $\langle e, t \rangle$



5.



6.



7.

