

Tony Ho

CPSC 4310

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Assignment 4

11 Rules:

- 1 $S \rightarrow NP VP.$
- 1 $S \rightarrow VP$
 - $SQ \rightarrow V NP NP ?$
 - $SQ \rightarrow V NP VP ?$
- 2 $NP \rightarrow \text{Det Nominal}$
 - $\text{Nominal} \rightarrow N$
 - $\text{Nominal} \rightarrow \text{Nominal } N$
 - $\text{Nominal} \rightarrow PP$
 - $VP \rightarrow V$
 - $VP \rightarrow VNP$
 - $VP \rightarrow V NP PP$
 - $VP \rightarrow V PP$
 - $VP \rightarrow VP PP$
 - $NP \rightarrow P$
 - $NP \rightarrow PP$
 - $NP \rightarrow NP PP$
 - $NP \rightarrow PP CC PP$
 - $NP \rightarrow PP PP$
 - 2 $PP \rightarrow \text{Prep } NP$
 - 4 $VP \rightarrow \text{Aux } VP$
 - $VP \rightarrow VP S$
 - $VP \rightarrow TO VP$
 - 2. $NP \rightarrow NP PP PP$
 - 5. $PP \rightarrow \text{Aux } PP$
 - 2. $NP \rightarrow NP CC NP$
 - 2. $NP \rightarrow CD N$

- Det \rightarrow a / an

- V \rightarrow come / go /

- N \rightarrow return / flight / am

- P \rightarrow I / there

- PP \rightarrow Calgary / Vancouver /
Lethbridge / Air /
Canada

- Prep \rightarrow between / on / from
to

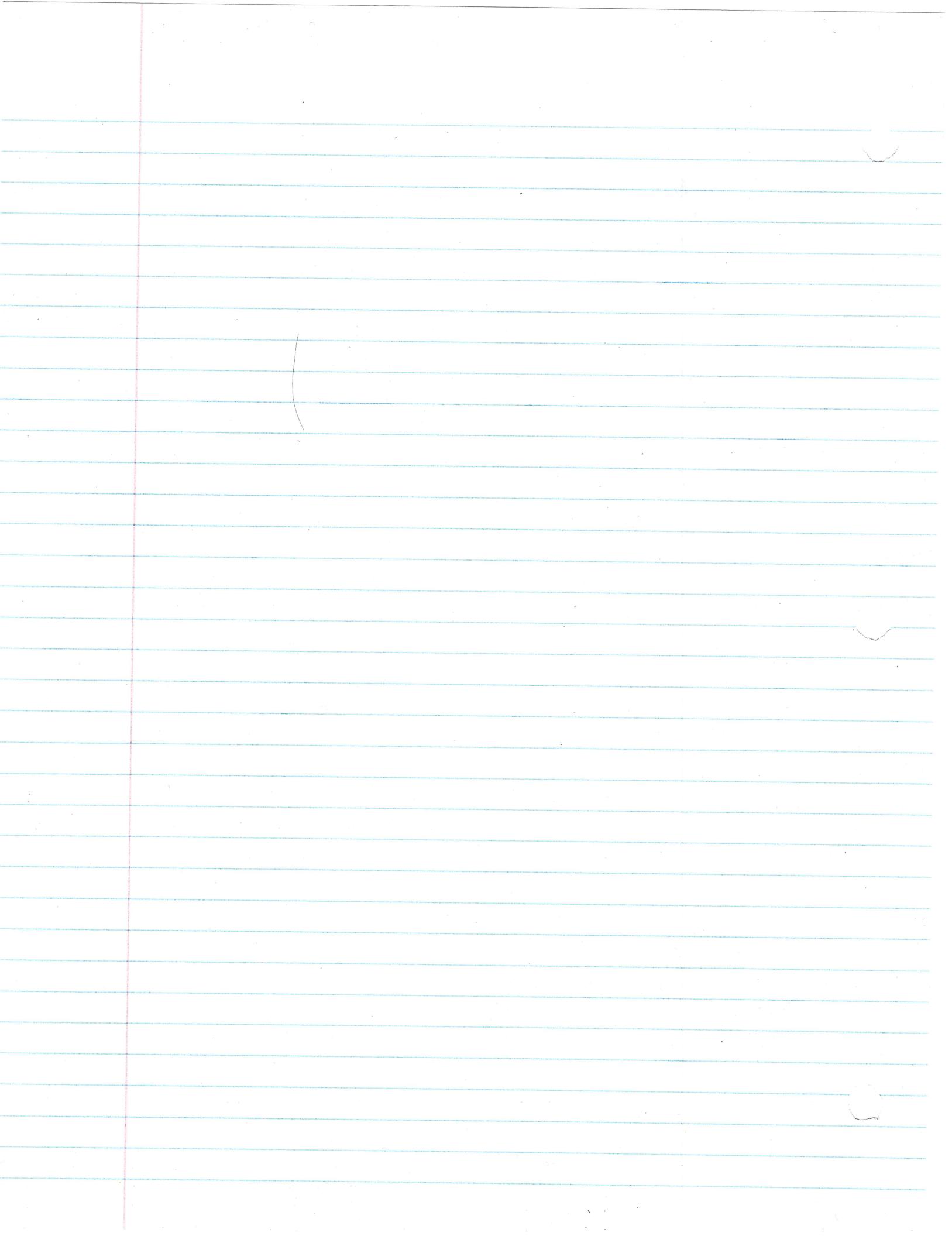
- CC \rightarrow and

- Aux \rightarrow would

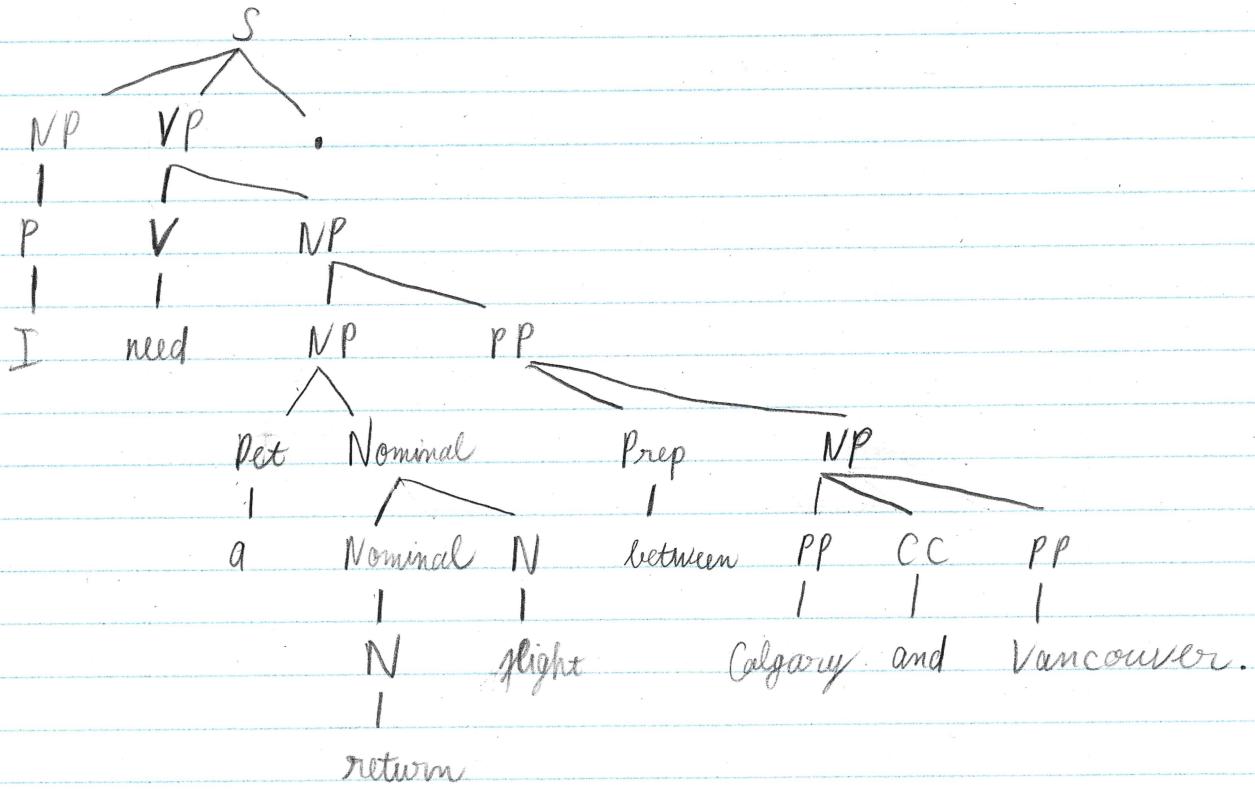
- V \rightarrow need / like / fly / is
I does / have

- TO \rightarrow to

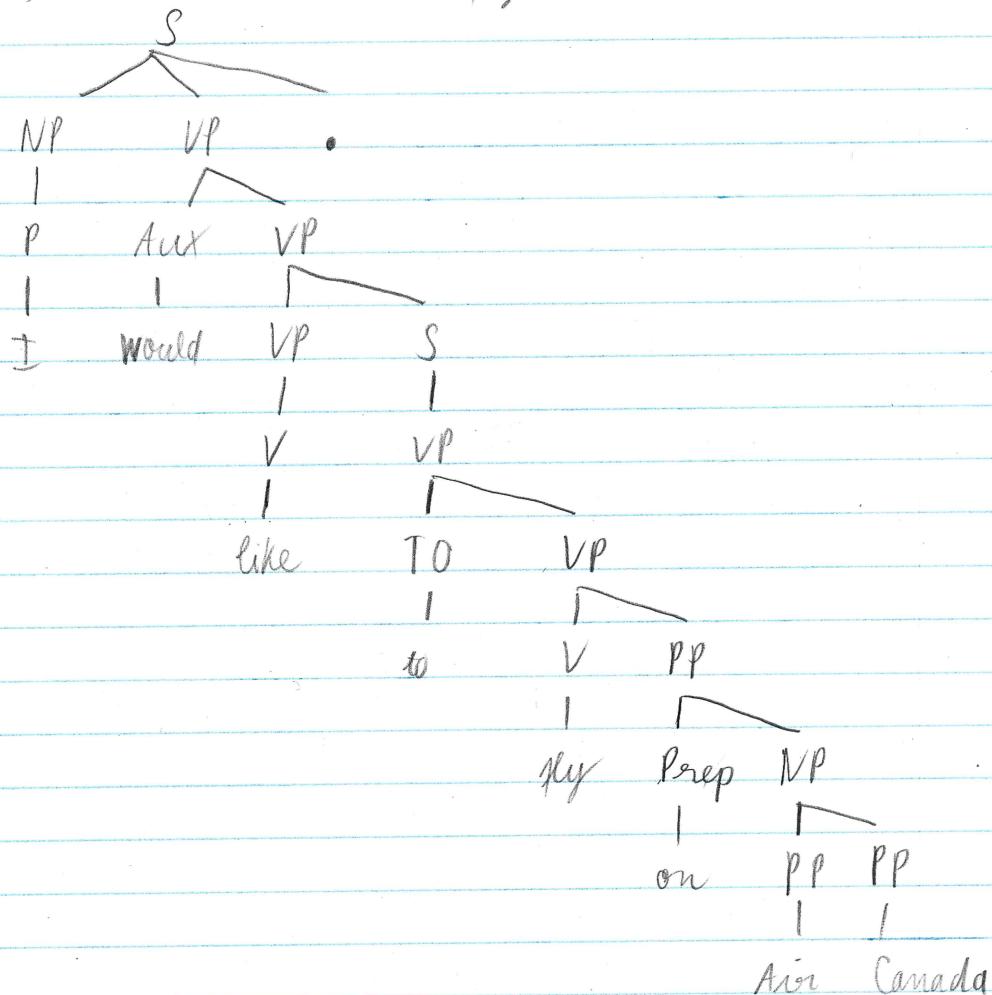
- CP \rightarrow 6:00 / 5:00



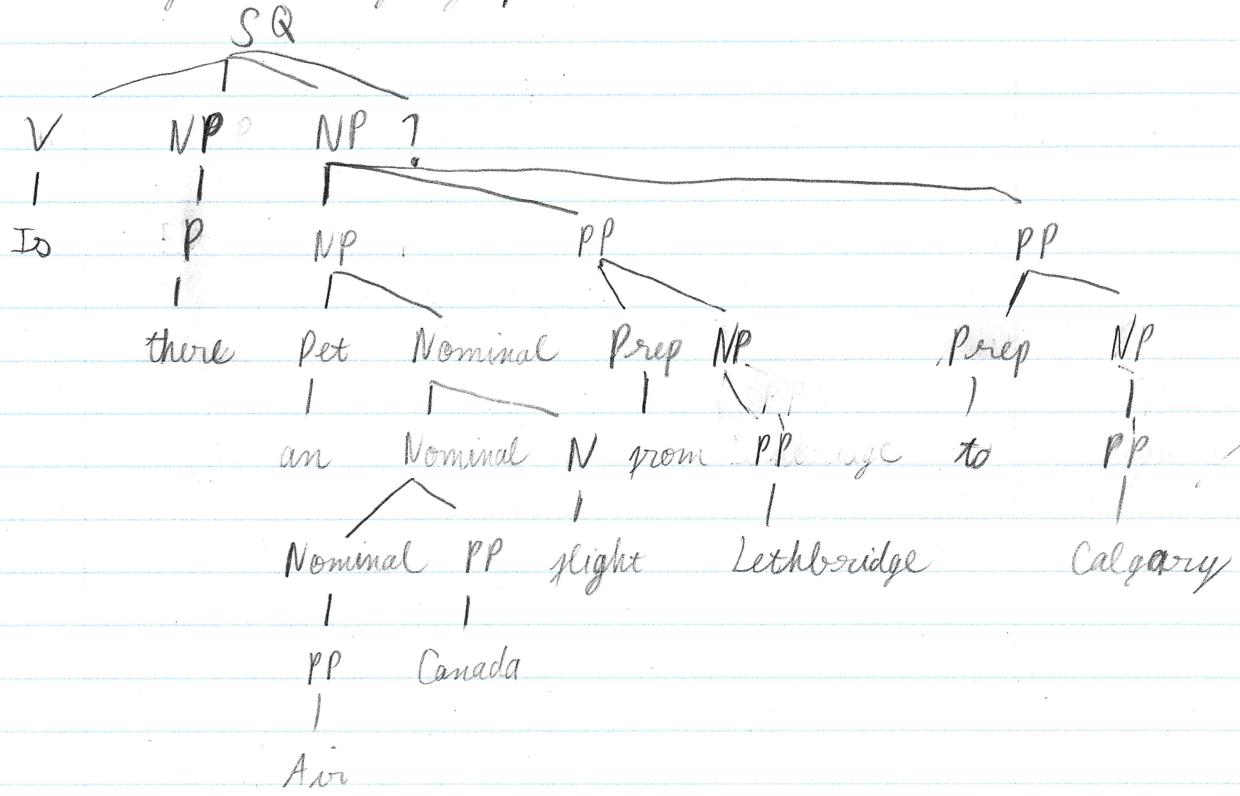
a) I need a return flight between Calgary and Vancouver.



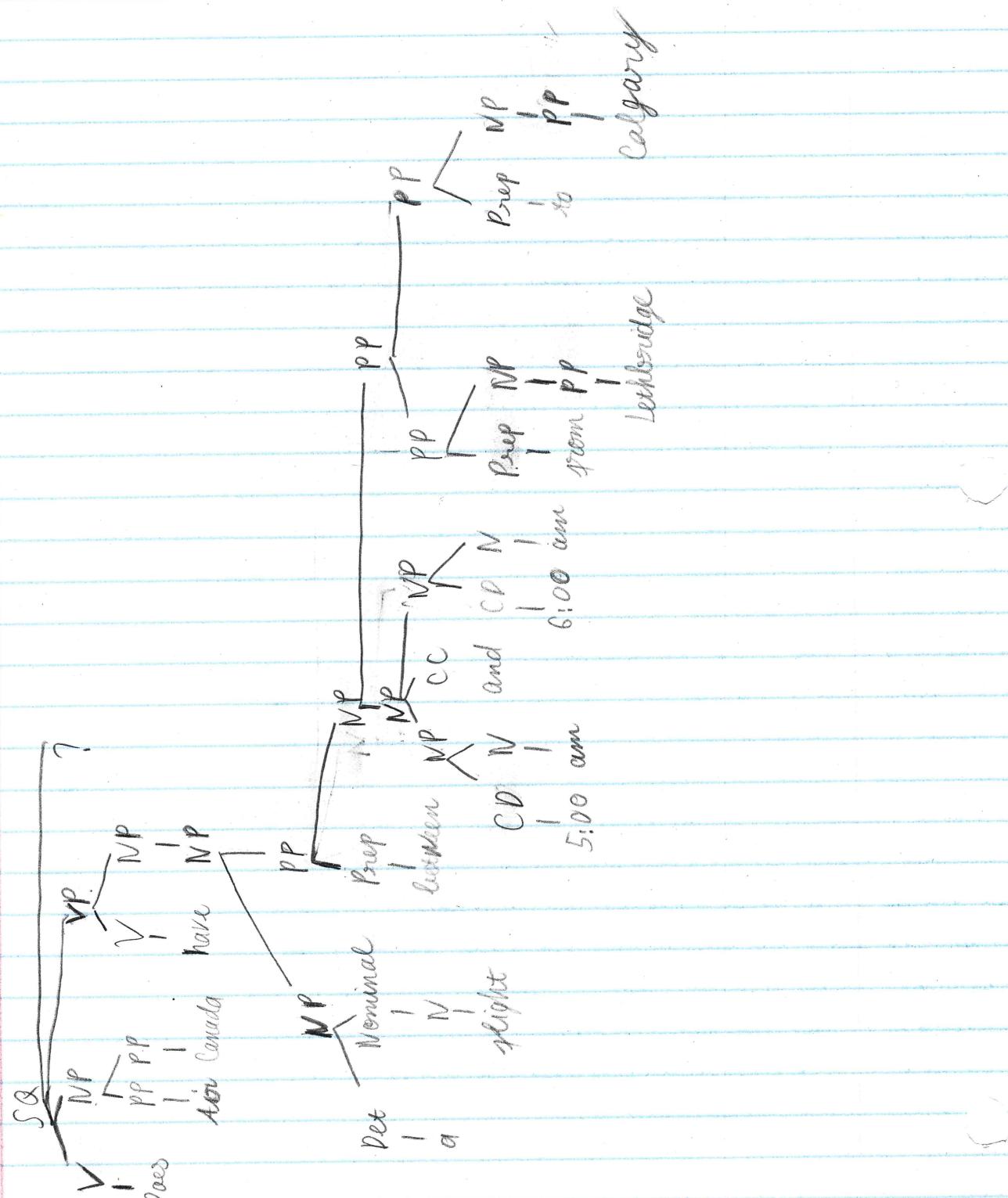
b) I would like to fly on Air Canada.



c) Is there an Air Canada flight from Lethbridge to Calgary?



d) Does Air Canada have a flight between 5:00 am and 6:00 am from Lethbridge to Calgary?



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0	people $N \rightarrow \text{people}$ 0.5 $V \rightarrow \text{people}$ 0.1 $NP \rightarrow N$ 0.35 $VP \rightarrow V$ 0.01 $S \rightarrow VP$ 0.001	1 fish $VP \rightarrow V.NP$ 0.007 $NP \rightarrow NP.NP$ 0.000686 $VP \rightarrow V$ NP $NP \rightarrow NP.NP$ 0.00498 $S \rightarrow VP.VP$ 0.01323	2 tanks $NP \rightarrow NP.NP$ 0.00196 $VP \rightarrow V.NP$ 0.042 $S \rightarrow VP$ 0.0042	3 with 5 rods $NP \rightarrow NP.NP$ 0.000096 $VP \rightarrow V @ VP-V$ 0.0000416 $@ VP-V \rightarrow NP.PP$ 0.00000476 $S \rightarrow VP$ 4.1×10^{-12}	4 rods $NP \rightarrow NP.NP$ 0.00002744 $@ VP-V \rightarrow NP.PP$ 0.0001372	5 rods $NP \rightarrow NP.NP$ 0.00196 $VP \rightarrow V.NP$ 0.14 $NP \rightarrow N$ 0.06 $VP \rightarrow V$ 0.006 $S \rightarrow VP$ 0.003
1						
2						
3						
4						
5						

