

Homework # 1 due September 9

1 Reading

Please read Chapters 1–2 in your textbook.

2 Problems

Please do the following problems from the book:

2.2.7 (transitive closure) full natural language proof required

3 Natural Numbers

Using the following definition of “greater than”

judgment `gt`: $n > n$

```
----- gt-one
s n > n
```

```
n1 > n2
----- gt-more
s n1 > n2
```

Prove the following theorems in SASyLF:

1. For any n , we have $(sn) > 0$.
2. If $sn_1 > sn_2$ then $n_1 > n_2$.
3. “Greater than” is transitive.
4. If $n > n$ then we have a contradiction.

4 Submission

Turn in the natural language proof on paper at the beginning of lecture. The SASyLF proofs should be placed in the file `homework1/homework1.slf` of your AFS volume.