

Recommended problems 3 — CS3512 — Fall '09

From the textbook exercises for Section 1.3, you should be *able* to do 1,2,12,16. (We'll also cover material on lists, strings, and languages, but I'll wait until later to include problems on those topics.) As usual, look the problems over and do as many as you need. (You can start by checking yourself against the problems answered in the back of the book. If you have questions about other problems from the book, please send email or otherwise ask.)

As usual, there are also questions raised in lecture notes (and left for you to answer). Always worth considering.

Additional problems

You need more work with sets, right?

1 For all $n \in \mathcal{N}$, let $A_n = \{m + n \mid m \in \mathcal{N}, m > n\}$.

a) $A_k =$

b) $A_k \cup A_{k+1} =$

c) $A_k \cap A_{k+1} =$

d) $\bigcup_{n \in \mathcal{N}} A_n =$

e) $\bigcap_{n \in \mathcal{N}} A_n =$

f) $\bigcup_{n \in A_k} A_n =$

g) $\bigcap_{n \in A_k} A_n =$

2 Prove that

$$\left(\bigcup_{A \in S} A' \right)' = \bigcap_{A \in S} A.$$

(Make sure the plan of your proof is clear, and that all steps are easy to check against the definitions.)