Homework

- **3.3**
- **3.2**
- **3.4**

- **Deadline: 3.16 (Monday)**
- The homework answers should be written in English.

Homework of Chapter 3

- 3.2 Given the grammar A→AA|(A)|ε,
  a. Describe the language it generates.
  b. Show it is ambiguous.
- 3.3 Given the grammar:

  exp → exp addop term | term

  addop → + | -

  term → term mulop factor | factor

  mulop → *

  factor → (exp) | factor

  Write down leftmost derivation, parse trees, and absctract syntax trees for the following expressions:

  (a) 3+4*5-6

- 3.4 The following grammar generates all regular expressions over the alphabet of letters (we have to use quotes to surround operators, since the vertical bar is an operator as well as a metasymbol):

rexp → rexp "|" rexp
| rexp rexp
| rexp "*"
| "(" rexp ")"
| letter

a. Give a derivation for the regular expression (ab|a)* using this grammar.

b. Show that this grammar is ambiguous.

c. Rewrite this grammar to establish the correct precedences for the operations (see chapter 2).

d. What associativity does your answer in part (c) give to the binary operations? Why?