Tik-79.144 **Syksy 1998**
Logic in Computer Science: Foundations
Exercise 11
24.11. ja 26.11.1998

1. Following `PROLOG` program reverses a list

```
reverse(Xs,Ys) :- reverse(Xs, [], Ys).
reverse([X|Xs], Revs, Ys) :- reverse(Xs, [X | Revs], Ys).
reverse([], Ys, Ys).
```

Notation `[X | Xs]` denotes a list where `X` is the first item and the rest of the list is stored in `Xs`. Notation `[]` denotes an empty list.

Describe how a `PROLOG` interpreter processes the queries

a) `reverse([a,b,c], Ys).`

b) `reverse([a,b,c], [c, b])`?

2. a) Write a `PROLOG` program which defines the legal moves of a Chess queen?

b) Write a `PROLOG` program which defines where a queen cannot move on a Chess board.

c) Write a `PROLOG` program which positions eight queens in a chessboard so that they are not attacking each other.