Tilastollinen tietojenkäsittely Exercise 5 28.11.2006

1. Write a line of R-code (without *if*-construction) to produce

$$f(x) = \begin{cases} x/y, & \text{if } y \neq 0\\ x, & \text{if } y = 0. \end{cases}$$

- 2. Write an R-function to test if the number given as an argument is a prime number.
- 3. Write a function to generate values from a) Binomial- and b) Poisson distribution by using the normal approximation. In both cases investigate the fit to corresponding theoretical distribution for some given values of parameters.
- 4. Write a function to generate values from N(0, 1) by using acceptance-rejection method.
- 5. Write a function to generate *n* vectors from a given multivariate normal distribution $N(\boldsymbol{\mu}, \boldsymbol{\Sigma})$.