UPPSALA UNIVERSITET
Matematiska Institutionen
Validated Numerics. Fall 2015.
Jordi-Lluís Figueras (figueras@math.uu.se)

Third computer lab. Second part of three.

1. Find all zeros of the function $f(x) = \sin(x) + x + \cos(x) - \frac{5}{2}$.

2. Write a program that computes tight enclosures of the function

$$\operatorname{erf}(x) = \int_0^x e^{-x^2} \mathrm{d}x.$$

   What is the value of $\operatorname{erf}(1)$?

3. Let X be a normally distributed random variable with zero mean and unit standard deviation. Compute tight enclosures of a, b such that $P(-a < X < a) = 0.95$ and $P(-b < X < b) = 0.99$.