All computer calculations must be done in Maple. These can be supplemented by work to be handed in on paper.

1) Write a Maple proc that takes as its input a list of numbers \( x_1, x_2, \ldots, x_n \) and returns as its output the matrix

\[
\begin{bmatrix}
\sin x_1 & \cos x_1 & \tan x_1 \\
\sin x_2 & \cos x_2 & \tan x_2 \\
\vdots & \vdots & \vdots \\
\sin x_n & \cos x_n & \tan x_n \\
\end{bmatrix}
\]

2) Write a Maple proc that implements Newton’s method for solving

\[ f(x) = 0. \] (1)

Your inputs into this proc should be only the function (or expression) for \( f \), an initial guess for the value of \( x \) that satisfies (1), a tolerance that, when achieved, makes the procedure exit cleanly when the method produces a solution that is “close enough”, and a maximum number of iterations should the tolerance not be achieved.