



EUROPEAN UNION EUROPEAN SOCIAL FUND

Information Technology

2010/2011

Homework Assignment

Prepare a report on the following problem: Given a function

$$f(x) = \frac{\sin(x)}{1+x^2} ,$$

draw the graphs of its first and second derivatives for $x \in [-5, 5]$. By direct inspection of the function values with the resolution $\Delta x = 0.1$ find the point x_0 for which the function f(x) attains its global maximum value in the range $x \in [-5, 5]$.

The report should contain (at least):

- a) Author's name, matric. card number.
- b) The problem statement with the formulae for the first and the second derivatives.
- c) The graph of the function and its derivatives (in single figure).
- d) The value of x_0 which should also be clearly marked on the function graph.
- e) The source code of all Octave scripts used for preparing the report.

Important

- Reports should be prepared as PDF files and sent by e-mail to the respective tutor.
- For grading information, hints and additional materials please visit http://www.l5.pk.edu.pl/ ~putanowr/iten .

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