

Basics of Mathematical Software

Exercise 12

Solve the following problems by means of the Mathcad software:

1. Find the stationary points of the function

$$f(x) = \sin(x) - \frac{1}{3}x^3 + \frac{1}{2}x^2 + 1$$

and determine their nature. First plot the graph of the function $f(x)$.

2. Calculate the coordinates of the center of gravity of the homogeneous plate bounded by the curves $y = \cos(x)$ and $y = x^2 + x$. First plot the curves.