

Student's Names	Student's IDs

Question No.	I	II	III	Total
Mark				

Instructions.

1. Work on this assignment as groups of three.
2. Use any trusted source of information to handle this assignment with proper citation and no plagiarism.

[I] Plot the function $f(x) = 2\sin(3x) + 3\cos(2x)$ on $[0, 2\pi]$ using MATLAB.

[II]

- (a) Write a MATLAB function for the Biscetion Algorithm (Algorithm 2.1 in [1]).
- (b) Use the function in (a) to find the root of $x^3 - 3x + 1$ on $[1, 2]$ accurate to within 10^{-3} .

[III]

- (i) Write a MATLAB function for Newton Algorithm (Algorithm 2.3 in [1]).
- (ii) Use the function in (i) to find the root of $x - 2^{-x}$ on $[0, 1]$ accurate to within 10^{-4} .
- (iii) Use the built-in MATLAB function for the Secant Algorithm (Algorithm 2.4 in [1]) to find the root of $x - 2^{-x}$ on $[0, 1]$ accurate to within 10^{-4} .
- (iv) Compare the results of (ii) and (iii).

[1] Numerical analysis, 9th Edition, Burden and Faires.

GOOD LUCK