

EE202 Numerical Methods for Engineers
Laboratory Assignment: 1

** Find solutions of the following questions in Matlab:

Question 1:

Find the negative root of $f(x) = x^2 - 3$ or solve $x^2 - 3 = 0$ by using Newton's method. Use of the Intermediate Value Theorem for locating an approximate root. (with an error less than 10^{-4} .)

x	y
0	-3
-1	-2
-2	1

Question 2:

Approximate all three roots of $f(x) = x^3 - 3x + 1$ by using Newton's method. Use of the Intermediate Value Theorem for locating an approximate root. (with an error less than 10^{-5} .)

Question 3:

Using the Newton-Raphson method, find an approximate root of the equation $f(x) = x^3 - 2x^2 - 5 = 0$ within the interval $[2, 3]$ with an error less than 10^{-6} .

❖ *When you run your code to compute the output, it should be similar to this:*

Command Window				
n	slope	Computed	Actual	Absolute Error
1	-3.0000000000	-1.7500000000	-1.7320508076	0.0625000000
2	-3.5000000000	-1.7321428571	-1.7320508076	0.0003188776
3	-3.4642857143	-1.7320508100	-1.7320508076	0.0000000085