## CL249 - Assignment2

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• Section : S2

## Part 1:

|               | Bisection |            | Newton-<br>Raphson |            | Secant            |                                      | Fixed-Point Iteration |           |
|---------------|-----------|------------|--------------------|------------|-------------------|--------------------------------------|-----------------------|-----------|
|               | Root      | iterations | Root               | iterations | Root              | iterations                           | Root                  | iteration |
| Equation<br>1 | 1.0       | 0          | 1                  | 0          | 0.999999998088019 | 8                                    | 1.0                   | 0         |
| Equation<br>2 | 2.0       | 0          | 1                  | 0          | 2.0               | 1 1.0                                |                       | 0         |
| Equation<br>3 | 0.619061  | 19         | 0.619061           | 5          | 1.512134568722915 | .512134568722915 13 1.51213262833176 |                       | 31        |
| Equation<br>4 | 0.740964  | 20         | 0.740964           | 3          | 0.740966          | 6                                    | 0.740965              | 1         |

## Part 2:

|            | Newton-Raphson (Multivariate)         |            | Fixed-Point Iteration (Multivariate)  |            |
|------------|---------------------------------------|------------|---------------------------------------|------------|
|            | Root                                  | iterations | Root                                  | iterations |
| Equation 5 | [1.618033988749989,1.618033988749989] | 5          | [1.618033829661219,1.618033829661219] | 12         |