**Q1:**

**Answers**

1a:

1b:

1c: Three solutions from visual inspection of the graph shown below:

Histogram

Description automatically generated with very low confidence

Fig 1c: Solution for equation depicted by points of intersections between the curves and .

1d: Other roots are not possible because the two equations and represent curves having different rates of change of with respect to i.e., . Therefore, the curves will deviate from each other and point of intersection i.e., their solutions are not possibles in the interval of numbers in real number domain.

Histogram

Description automatically generated with low confidence

Fig 1d: Curves for and in a different scale to depict their deviation from each other beyond the three intersection points.