Department of Mathematics
Comprehensive Examination
2020 Spring Semester Part 1: Core Classes

Directions:

5. Consider the equation $x^2 = 1 + \sin x$.

   (a) Prove that the equation has exactly two solutions.

   (b) Choose one of the two solutions. Use Newton's Method to find an approximation with an absolute error of less than 10^-

5. Consider the matrix $A =$