Assignment 1

4MM013- Computational Mathematics

Deadline: 2 March - 16 March (10%)

1. State the definition of a **function** and a **composite function**.

Let and be functions defined as follows:

such that and

such that

Calculate ( and

(20)

1. Calculate the inverse of these functions:

(20)

1. a) State the definition of the **gradient** of a function.
2. Sketch the graph of the following:

with intervals of

(20)

1. Which of the following are **linear equations** and which are not linear? If it is linear solve the equation.
2. , b) , c) d)

(20)

1. Solve the following system of equations using matrix form.

(20)

Assignment 2

4MM013- Computational Mathematics

Deadline: 25 March - 8 April (20%)

1. Using Cramer’s rule obtain the solutions to the following set of equations:

(20)

1. Solve the following using the inverse matrix method:

(20)

(a) Solve the following using Gauss elimination:

(20)

(b) Find the inverse of the matrix from (a) using the same method and step.

(20)

1. Write the following series in summation form:

(20)