**Faculty of Science and Technology**

**Foundation Mathematics2**

**Coursework 1**

**Instructions**

* **This can be attempted in groups not exceeding 3 people.**
* **Present all you answer using Microsoft ® Word OR can be handwritten and scanned.**

**Question 1:**

**** (5mks)

**Question 2:**

Find the domain of f(x) = (2x + 1) / (3x - 2). (5mks)

**Question 3:**

Given the function f(x) = (x2 + 5x + 6) / (x2 + x - 2). Find

1. Holes of the function (5mks)
2. Vertical Asymptote (3mks)
3. Horizontal Asymptote (if any) (2mks)

**Question 4:**

Given a function f(x) = (x2 + 3x + 9) / (x2 - 9). Is this a Rational Function? If yes find its vertical asymptotes (5mks)

**Question 5:**

1. Find the vertical asymptotes of the rational function f(x) = (x2 + 3x + 9) / (x2 - 9). (5mks)
2. Find the domain and the range of the real function, f(x) = 1/(x + 3). (5mks)

**Question 6:**

Solve the cubic polynomial f(x) = x3 – 4x2 -7x + 10 = 0 Given that one of the factors for the equation is x + 1. (5mks)