American International University-Bangladesh

Department of Mathematics

**Math 4**: Matrices, Vectors and Fourier Analysis(Section: **C**)

**Assignment (mid)**

Summer: 2019-20

Total Marks: 10

1. If and , then prove that .
2. Solve the following system by using elementary row operation. Also check your answer.



1. Determine the value(s) of such that the following system of linear equations has no solution, more than one solution, and a unique solution.

.

1. Sketch and Find the Fourier series for the function *f* (*x*) defined by

f(x) = (1 - x^2) on -1 < x < 0;  0 else

1. Find -point DFT for the signal,;

where

Instructions:

* Assignment must be neat and clean.
* At the top of every page you must write your name, ID and page number.
* Incomplete assignment will not be allowed.