FINAL EXAMINATION

TIME ALLOWED: 90’

Subject: Linear Algebra. No books allowed.

1/ Find the matrix such that , where  .

2/ Solve the linear system , given that .

3/ Find all real value(s) of *m* such that the matrix  is invertible.

4/ Given the inner product in  as follow:

.

Find the distance between two vectors  and .

5/ Let  be the linear transformation.

Assume that .

Compute .

6/ / Let  be the linear transformation and  be the matrix of in the basis . Find .

7/ Diagonalize (if possible) the matrix ,

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