MS 6121/MS 6128:ADVANCED MATHEMATICS I

TUTORIAL SHEET THREE

1. a) The roots of the equation  are and .Find
2. The equation whose roots are  and.
3. 
4. 

b) If , find the value of N.

2. Given:

Find

1. 
2. 
3. 
4. x,y and z given that 

3. Given that: ,

Evaluate

1. 
2. AB
3. BA
4. det (AB) and det(BA) and comment on your results.

4. Given that: ,

Evaluate

1. A.adj(A)
2. 
3. Is matrix A invertible? Give reasons.
4. 

5. Given that:and I is the 3 x 3 unit or identity matrix.

1. Is matrix A invertible?
2. Verify that
3. 
4. 
5. 

6.a) Prove that for any 3 x 3 Matrix M,

b) Given that 

Find:

1. 
2. AB
3. 
4. Det(AB) and verify that det(AB)=det(A).det(B)

7. Given that 

Find:

1. 
2. 
3. AB
4.  and verify that 

8. a) Given that ,Prove that 

1. Solve the equation



1. Solve the equation 

9. a) M is the matrix  find the values of a for which M is singular.

b) For which choices of the constant k is the following matrix invertible?



1. Let A, B and C be 3 x 3 matrices



Find 

10. Given matrix 

Evaluate:

a) det (M)

b) 

c)

d)

11. Let A, B and C be the following 3 x 3 matrices



Compute:

a)

b)

c)

d)

12. a) If ,show that 

b) Find  , when 

and hence solve the simultaneous equations :

13.a)Solve for x given that 

b) With examples explain four types of Matrices.

c) Find the adjA, given that 

14 a) With examples explain the meaning of an order of a Matrix.

b) Prove that 

c) Find  if 

15 a) Show that, given that 

b) If  and , find the value of x.

c) If  and  are the roots of the equation.

Find the value of 

16.a) Determine whether the two matrices given are inverses of each other

b) i) Simplify

ii)Solve the following simultaneous equations by inverse Method;

