

 **Holiday homework,Class XII, 2018-19**

**Ch- Matrices and Deteminants**

1. If  are in G.P, then prove that the determinant  is independent of r.
2. Using properties of determinants find the value of the determinant .(Ans:0)
3. If , then verify that , where I is identity matrix of order 3.
4. Using matrix method, solve the following system of equation: 

Prove that .

**Ch-Relations and Functions**

1. Let the function  be defined by , . Show that is neither one-one nor onto.
2. Show that the relation R defined by  on the set  is an equivalence relation.
3. Functions  are defined respectively, by , , find

a) fog b) gof c) fof d) gog

1. If  and are two equivalence relations in a given set A, show that is also an equivalence relation.
2. Let Z be the set of all integers and R be the relation on Zdefined as . Prove that R is an equivalence relation.
3. Find the number of equivalence relations on the set containing  and .

**Ch- Inverse Trigonometric Functions**

1. Show that 
2. Prove that .
3. Prove that .
4. Prove that .
5. Prove that .
6. Write the principal values of the following:

a) 

b) 

c) 

d) 

1. Prove that 
2. Prove that .
3. Prove that , 
4. If , prove that .
5. Show that .
6. Solve : .
7. Prove that: 
8. Prove that: .
9. Prove that: .
10. Prove the : 
11. Prove that: .
12. Prove that: 
13. Solve for x: .
14. Write the principal value of 

If , prove that .

**Ch-Continuity and Differentiability**

1. If  and , then prove that .
2. If, then prove that.
3. If, then .
4. If  and , then find .
5. Differentiate the following w.r.t x: .
6. If, then prove that .
7. If, then prove that .
8. If,then prove that .
9. If, then prove that .
10. If, then find .
11. If, then prove that .
12. If , then show that 
13. If, then prove that .
14. If, then find .
15. If, then find 
16. If, then find 

**Ch-Applications of Derivatives**

1. If , then find the approximate value of , using differentials.

 ( Ans: 77.66).

1. Find the equation of tangents to the curve ,  that are parallel to the line .
2. Using differentials find the approximate value of  if it is being given that.
3. It is given that for the function , , Rolle’s theorem holds with . Find a and b.

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