

## CLASS: XII Relations and Functions

## Answer the following:

## 1. Show that the relation R on R defined as  is neither reflexive nor symmetric nor transitive.

## 2. Show that the function  defined by is one – one and onto function. Hence find .

## 3. Let  be a function defined as . Show that  is invertible. Find the inverse of ‘f’.

## 4. Consider given by . Show that  is invertible with .

## 5. Consider the function given by . Prove that f is invertible with .

## 6. Let  be a function defined as . Show that is one-one and onto. Hence find .

## 7. Let N denote the set of all natural numbers and R be the relation on NxN defined by

##  ( a,b)R(c,d). Check whether R is an equivalence relation on NxN.

## 8. Show that the function  defined by f(n) = n+1, if n is even,

##  f(n) = n – 1 , if n is odd. Show that f is a bijection.

9**.** Let be a function. Define a relation R on X given by .

 Show that R is an equivalence relation.

10. Prove that the relation R on the set defined by for all is an equivalence relation.

 2.INVERSE TRIGONOMETRIC FUNCTIONS

1. Find the value of  ()

2. Find the domain of  

3. Find the principal values of  

4. Write in simplest form:  

5. Prove: .

6. Prove that .

7. If , then prove that 

8. Write in the simplest form.

9. Solve for x: .

10. Find the value of 