Module 3 homework

Name:

Question 1 10 points

You inherit $1000 and invest it at 2% compounded continuously. Consider the correspondence between the balance in your account and time.

Is this a function?

How do you know?

Question 2 10 points

Let P be a rule that assigns to each counting number the nearest prime number to that counting number.

Is this a function?

If it is, how do you know?

If it’s not, can you rewrite it so it is a function?

Question 3 10 points

Given:



This is a one-to-one function. Why?

What is the inverse function to this one? Show all work

Question 4 10 points

 is one-to-one. The domain is [0, infinity] and the range is [2, infinity].

What are the domain and range of its inverse function? Label carefully so the grader knows you know.

Question 5 10 points



Calculate  show your work

Question 6 10 points

Give 3 examples of algebraic numbers. Have one that is a rational number, one that is an irrational number, and one that is a complex number.