**ECS20**

**Homework 5**

**Exercise 1**

Find these values :



**Exercise 2 (proof)**

a) Show that the following statement is true:

“If x is a real number such that x2+2=0, then x4 = -5”.

b) Constructive proof:

“If x and y are real numbers such that x < y, show that there exists a real number z with x <z < y”

**Exercise 3**

Let *x* be a real number. Show that 

**Exercise 4**

Show that for all strictly positive integer *n* and for all real number *x*, 

***\*\*Extra credit:***

Let us consider a generalization of exercise 3. Let x be a real number, and N an integer greater or equal to 3. Show that:

