MID-TERM EXAM Monday April 8th, 2013. Duration: 60 minutes.

	-	_			
Name				Class	
11411110			 	Ciuss	

(It is not allowed to use all types of documents, computers and mobile phones)

Question 1. Fill in each blank with a suitable word. Some words are given in the following box.

acute / axiom / axioms / bijection / bijective / bounded / continuous / convergent / converges / critical / determinant / determine / extreme / injection / isosceles / linear / linearly / surjective / surjection / uniform / uniformly

- a) Every sequence of real numbers which is monotonically increasing and bounded from above is ... convergent
- b) We say that two sets A and B are equivalent if there exists a ... bijection ... f from A into B.
- c) A function f is ... surjective ... if and only if $f^{-1}(y)$ is not empty for any y in its codomain.
- d) The maximum and minimum values of a function of are called the ... extreme ... values of it.
- e) If f is an integrable real-valued function on the interval [a, b], then f is ... **bounded** ... on [a, b].
- f) If the real-valued function f is continuous on the closed interval [a, b], then f is ... *uniformly* ... continuous on this interval.
- g) In mathematics, statements which are accepted to be true without proof are called ... axioms
- h) A triangle ABC is called ... isosceles ... if some two sides of it are congruent.
- i) The matrix of a ... *linear* ... operator T from a finite-dimensional vector space V into itself is a square matrix.
- j) A linear operator T from a finite-dimensional vector space V into itself is a isomorphism if and only if its ... *determinant* ... is nonzero.

Question 2. Translate the following paragraphs into Vietnamese.

ς.	
ເ)	A primitive of a function f of the variable x on an interval (a,b) is any function F whose derivative is equal to f at each point x of the interval. It is clear that if F is a primitive of f on the interval (a,b) , then so is $G=F+C$, where C is an arbitrary constant. The converse also holds: Any two primitives of the same function f on the interval (a,b) can only differ by a constant. Consequently, if F is one of the primitives of f on the interval (a,b) , then any primitive of f on this interval has the form $F+C$, where C is a constant. The collection of all primitives of f on the interval (a,b) is called the indefinite integral of f (on this interval) and is denoted by the symbol $\int f(x) dx$.

b)	Euclidean geometry is the geometry of space described by the system of axioms first stated systematically (though not sufficiently rigorous) in the <i>Elements</i> of Euclid. The space of Euclidean geometry is usually described as a set of objects of three kinds, called "points", "lines" and "planes"; the relations between them are incidence, order, congruence, and continuity. The parallel axiom (fifth postulate) occupies a special place in the axiomatics of Euclidean geometry. The first sufficiently precise axiomatization of Euclidean geometry was given by D. Hilbert. There are modifications of Hilbert's axiom system as well as other versions of the axiomatics of Euclidean geometry. For example, in the vector axiomatics the concept of a vector is taken as one of the basic concepts. On the other hand the relation of symmetry may be taken as a basis for the axiomatics of plane Euclidean geometry.
	nestion 3. Translate the following sentences/paragraphs into English. Nếu tập hợp A có n phần tử thì số tập hợp con có k phần tử ($0 \le k \le n$) của A là C_n^k .
b)	Cho (f_n) là một dãy những hàm liên tục trên $[a,b]$. Nếu dãy hàm (f_n) hội tụ đều đến hàm f trên đoạn $[a,b]$ thì f liên tục trên $[a,b]$.
c)	Viết phương trình tiếp tuyến của đồ thị hàm số $y = x^3$ biết nó song song với đường thắng $y = 4x$.
d)	Đường thẳng a vuông góc với mặt phẳng (α) nếu a vuông góc với hai đường thẳng cắt nhau nằm trên (α) .
e)	Diện tích của một tam giác bằng một nửa tích của một cạnh với chiều cao tương ứng của nó.