Course no. 66-111 Date of exam: 2013 moed A

Subject: Mathematics for economists

Duration of the exam: three hours

Auxiliary material: a calculator

1. Calculate the following limits:

|  |  |
| --- | --- |
| A.B. | 002.jpg |

2. Calculate the following integrals:

|  |  |
| --- | --- |
| A.B.C. | 003.jpg |

3. Investigate the function  and draw its graph.

4. Calculate the minimum, maximum and saddle points of the function:



5. Given function *f* (*x*, *y*) in two variables and *g* (*t*) in one variables. It is known that



1. Is *f* homogeneous? If so, of what degree?
2. Calculate *fx* at point (1, 1).
3. Calculate  at point (1, 1).

6. Express your opinion on each of the following claims:

1. The limit does not exist.
2. *f* (*x*, *y*) is homogeneous of degree 1, therefore the following exists:

1) 

2)  for *a* ≠ 0

1. Given the implicit function , therefore 
2. *g* (*x*, *y*) is a homogeneous function of degree 2. We will define , therefore *hxx* is not a homogenous function.
3. 

 **GOOD LUCK!**