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

Subject: Mathematics for economists

Duration of the exam: three hours

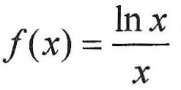
Auxiliary material: a calculator

1. Calculate the following limits:

|  |  |
| --- | --- |
| A.  B.  C. | 017.jpg |

2. Calculate the following integrals:

|  |  |
| --- | --- |
| A.  B.  C. | 018.jpg |

3. Investigate the function  and draw its graph.

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

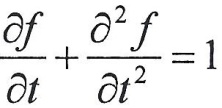
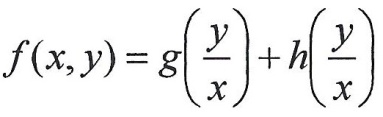
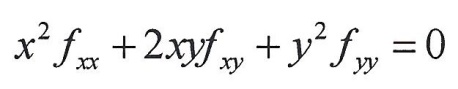
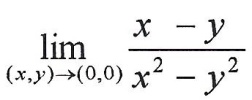
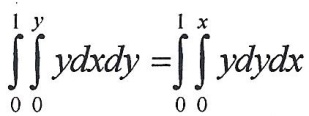
020.jpg

5. Given function *f* (*x*, *y*) in two variables and it is known that it is homogenous of

degree 3. Given: 021.jpg. Calculate the following expressions:

|  |  |
| --- | --- |
| A.  B.  C. | 022.jpg |

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

1. Given the implicit function 024.jpg, therefore 025.jpg at point (1, 2) is equal to -2.
2. Given the function 026.jpg, where 027.jpg. Therefore 
3. Let *g*, *h* be functions with one variable, and let us define  . Therefore, 
4. The limit does not exist.
5. 

**GOOD LUCK!**