MICROECONOMIC PROBLEMS
CLASS #1

Problem 1

An enterprise has a production function given by $F(K,L) = 2KL^{1/2}$. What would be the formula for I(6)?

Problem 2

How is the rate of technical substitution of capital by labour changing with the increase of labour inputs in the production function as in **Problem 1**.

Problem 3

Which of the definitions (postulates) concerning the properties of production functions will be fulfilled by a linear one with positive coefficients?

Problem 4

The following production functions are given:

a) $y = KL$

b) $y = AK^a L^b$, where A, a, b >0

c) $y = \min\{2K,3L\}$

d) $y = aK + Lb^{1/2}$, where a, b > 0

e) $y = 2K + 3L$

f) $y = 2,5[0,3K^{1/2} + 0,7L^{1/2}]^{3/2}$

For each of them:

1. Determine whether they exhibit increasing, decreasing or constant returns to scale;
2. Find the marginal rate of technical substitution and check whether it is decreasing;

Problem 5

The production function of an enterprise takes the form $Q = (KL)^{1/2}$. The price of capital is r and the price of labor is w.

a) Find the form of the short-term cost function of this enterprise, when its capital stockis K'= 25 and v = w = 1.

b) Find the long-term average cost function of this enterprise.

c) What costs will this enterprise bear when it produces 100 units of output, when the factor prices are v = 4 and w = 16?