MICROECONOMIC PROBLEMS

CLASS #5

Problem 1

The supply and demand on a perfectly competitive market equalise for a price of $30. It he minimum of the long-run average cost curve is also equal to 30, which of the following is true? Why?

a) Price equals marginal cost of a typical entreprise.
b) Typically profits are zero.
c) The whole market is in equilibrium

Problem 2

What is the long-run supply function for an entreprise operating in a perfectly competitive environment, where:

a) $LAC(q)=q^2-20q+300$?
b) $LMC(q)= q^2-20q+300$

Problem 3

In a competitive industry all companies have the same long-run total costs curve $LTC(q)=q^2+16$. Also in the long run, demand for the output of this industry is given by $D(p)=200 - p$. How many companies will there be in a long-run equilibrium?

Problem 4

Bicycle industry comprises 100 firms with long-run costs curves given by $TC(q)=2+q^2/2$ and 120 firms with long-run costs curves given by $TC(q)=q^2/10$. There can be no new entrants to this industry. What is the long-run supply curve for this industry with the price above 2?

Problem 5

American wheat is produced under purely competitive conditions. The long-run average cost function of a single farmer is U-shaped and reaches its minimum at the output level of 1000 units and price level of $3 per unit.

a) If the market demand curve for wheat is $Q_D = 2600000 – 200000p$, what will be the equilibrium price, output and number of firms in the long run?
b) Assume the market demand curve shifts upwards and is now $Q_D = 3200000 – 200000p$. If the farmers are not able to increase production in the short run, what will be the new price of wheat? What will the profits of a typical farmer be in such situation?
c) Find the parameters of the new long-run equilibrium in the wheat market, i.e. the unit price of wheat, the level of output of the entire industry and the number of farms in the industry.
d) Present the graphical analysis of points a) – c).