MICROECONOMIC PROBLEMS (#7)

Problem 1
There is a demand function for a product supplied solely by one company: $Q=100-2p$. This company has the total cost function of $TC(Q)=2Q$.
   a. What is the profit maximising output level and what is the profit in the optimum?
   b. How much should the monopolist produce if he could apply perfect price discrimination?
   c. Are his profits higher then?

Problem 2
A monopolistic company can sell its stuff – produced at a marginal cost of $MC=20=const$ – to two kinds of consumers. The first have the demand function of $Q_1=100-p_1$, while the latter have the following $Q_2=140-4p_2$. What is his maximum profit?
Analyse two cases:
   a. When he can fully discriminate
   b. When he cannot discriminate.

Problem 3
Behind the seventh sea, behind the seventh mountain there was a country with only two cities A and B. In both of them exclusively oranges are consumed. The demand for oranges is $q=200-p$ in city A and $q = 300 - p$ in city B. A monopolist producing oranges operates in this country and its total cost function is given by the formula $C(q) = q^2$.
   a. If the monopolist treats cities A and B as separate markets, what will the price and output levels be in both these markets?
   b. If consumers in both cities had the possibility to buy oranges for 200 pesos from a different supplier, how would this change the monopolist's behavior?
   c. If the monopolist is not able to apply price discrimination but must treat the entire country as a single market, what will the price and output levels be in both these markets?

Problem 4
A new model of CentoCento car is produced in a SmallCarFactory. On an internal market the company enjoys a monopolistic position, but globally it has to compete with other car producers. Because local demand is three times less elastic than the global one, SmallCarFactory is differentiating among consumers selling at different prices. If the global elasticity of demand equals –6 and the price amounts to $5000 what should be the price on a local market?

Problem 5
An owner of a private theatre has decided that the students' demand for tickets for her plays is more elastic than in the case of other theatre lovers. Hence, she decided to sell them tickets at a lower price. Is that reasonable? Justify!