Seminar 5.

Task 1. Companies A and B compete in the market for product X. A is very efficient in the production of product X, with low marginal cost $MC(A) = 1$; B, in turn, has constant marginal costs $MC(B) = 10$. If the market demand for product X is defined as $Q = 100 - P$, find the equilibrium price, output and profit level for each competitor.

Task 2. There are 80 small firms in the industry with the same cost function $TC_i = 2 + 8q_i^2$, and another large leading firm with a cost function $TC_L = 20 + 0,275q_L^2$. Sectoral demand is represented by a function $Q^D = 256 - 3P$. What will be the equilibrium price, and how the output will be divided between the leader and the outsiders?

Task 3. The curve of market demand in the production of sunflower oil in Ukraine is given as $Q_d = 400 - 8P$. The industry is dominated by a large firm with constant marginal costs of $ 10 per barrel of oil. There is also a competitive environment of 100 firms, each of which has marginal costs $MC = 10 + 50q$, where q - the output of a typical firm from the environment. Determine the equation of the supply curve in a competitive environment, and determine the residual demand curve. How many barrels should the dominant firm produce to maximize profits? What will be the market price as a result? What market share will the dominant firm have?