

Due: Wednesday, December 11

1. Nicholson 14.6

2. The taxicab market in New York City is in long-run equilibrium. It is a perfectly competitive constant-cost industry. The price of a cab ride is \$1.00, and under current market conditions 9 million passenger miles are provided. This output is produced by 600 cabs, each of which transports passengers for 15,000 miles per year.

- Depict the above situation in diagrams for the market and a representative firm.
- Now, suppose that the city requires each taxi to have a medallion, or special license, to operate, and it issues 600 medallions, giving one to each taxi. This regulation thus limits the number of taxis in New York City to 600. Subsequently, bus and subway fares are raised sharply, increasing the demand for taxis. Evaluate the effect of this increased demand on the taxi market. What will happen to the price of a cab ride? What will happen to market output? Indicate output and profits of a typical firm. What will the new long-run equilibrium be like?
- After several years, some of the cab drivers who have a medallion want to retire. They recognize that their special licenses have monetary value. The city decides to let them sell their medallions, so that someone else can operate a cab. How will the market price of a medallion be determined?

3. The dairy industry is in long-run equilibrium, at a price of \$10 per hundredweight (hundred pounds of fluid milk). Because milk is costly to transport, farmers produce milk in all parts of the country. Some land is better suited for raising dairy cattle and producing milk than other land. Raw milk is homogeneous. Scale economies in production are negligible compared to market output. No significant entry barriers exist.

- Show in a graph and describe long-run equilibrium for the market and for the marginal firm.
- Do inframarginal firms earn economic profits?
- Suppose government acts as a buyer of last resort and supports the price of milk at \$12 per hundredweight. Show the short-run effect on the milk market. What will be the cost of such a program to taxpayers? to consumers of milk? Indicate these amounts in your diagram of the milk market.
- After entry has ceased, depict the new marginal dairy farmer's situation.

4. Nicholson 18.6

5. Nicholson 18.8

6. Dr. Thomas "Fat" Wallet has two kinds of patients, insured and uninsured. Their respective demand curves for teeth cleaning are: Insured: $Q_I = 200 - 4P_I$ and Uninsured: $Q_U = 200 - 8P_U$ where P_I and P_U are the prices he charges insured and uninsured patients, respectively. His marginal cost for cleaning teeth is upward sloping; the more time he spends cleaning teeth the less time he has for golf, and the value of his foregone leisure increases the more of it he foregoes. Specifically, his marginal cost function is: $MC = 0.1(Q_I + Q_U)$.

- What prices and outputs for insured and uninsured patients should Dr. Wallet set in order to maximize profits?
- Suppose price discrimination is not possible, and Dr. Wallet must charge the same price to all customers. What price and output will maximize profit?