**Q1. Initially there is one firm in a market for cars. The firm has a linear cost function: C(Q)=2 Q. The market inverse demand function is given by P(Q)=9 − Q.**

**1. What price will the firm charge? What quantity of cars will the firm sell?**

**2. How much profit will the firm make?**

**3. Now, a second firm enters the market. The second firm has an identical cost function. What will the Cournot equilibrium output for each firm be?**

**4. What is the Stackelberg equilibrium output for each firm if firm 2 enters second?**

**5. How much profit will each firm make in the Cournot game? How much in Stackelberg?**

**6. Which type of market do consumers prefer: monopoly, Cournot duopoly or Stackelberg duopoly? Why?**

**Q2. In a duopolist market two firms can produce at a constant average and marginal cost of AC = MC = 2. They face the market demand curve P = 14 – Q, Where Q = Q1 + Q2 where Q1 is the output of Firm 1, Q2 is the output of Firm 2. In the Cournot’s model:**

1. **Find action-reaction functions of the two firms.**
2. **Calculate the profit maximising equilibrium price and output.**
3. **What are the profits of the two firms?**
4. **Compare it with competitive equilibrium.**

**Q3. Assume three firms face identical marginal costs of 20 with fixed costs of 10. They face a market demand curve of P = 200 – 2Q. Find the Cournot equilibrium price and quantity.**

**Q4. Suppose that a monopolist has a marginal cost of Rs 4, and a fixed cost of Rs 48. Suppose also that the demand curve is given by Q = 12 – (P/2).**

1. **What is the marginal revenue of the monopolist as a function of Q?**
2. **What is the profit maximizing price and quantity for the monopolist?**
3. **What is the efficient price?**
4. **What is the deadweight loss from the monopolist’s maximizing profits?**

**Q5. Duopolists face the following market demand curve *P* = 30 – *Q.* Also, MC1 = MC2 = 0**

1. **What is the output in Cournot equillibrium?**
2. **If the two firms collude, what is the profit maximizing quantity?**
3. **If they agree to split their profits, what is the individual output?**