1. Assume a monopolist faces a market demand curve \( p = 100 - 2Q \), and has a short-run total cost function \( c(Q) = 640 + 20Q \). What is the profit-maximizing level of output? What are the profits? Graph the marginal revenue, marginal cost, and demand curves, and show the area that represents deadweight loss on the graph.

2. A monopolist sells in two states and practices price discrimination by charging separate prices in each state. The monopolist produces at constant marginal cost \( MC = 10 \). Demand in market 1 is \( Q_1 = 50 - p_1 \). Market 2 demand is \( Q_2 = 90 - 1.5p_2 \). What price will be charged in each market?

3. Consider a monopolist that serves 2 groups of consumers. Group 1 has a demand \( q = 10 - p \) and group 2 has a demand \( q = 10 - 2p \). The marginal cost of production is 1.

   1. (a) What is the monopoly price for group 1? group 2? (and the quantity provided by the monopolist)

      (b) What is the consumers’ surplus, producer’ surplus, total welfare in each group?

      (c) If the monopolist cannot discriminate, what is the aggregate demand? What is the new monopoly price? What is the consumers’ surplus, producer’ surplus, total welfare?

4. Perloff, Third edition, question 5 page 385

5. Perloff, Third edition, problem 18 page 386

7. Perloff, Third edition, problem 20 page 420