1. 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.

   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?

2. Suppose a monopolist’s costs are described by the function $C = 200 + 2Q^2$, and it faces a demand curve of $Q = 240 - p$. If it cannot price discriminate, what are the profit-maximizing price and quantity? What are profits? If the monopolist is able to practice perfect price discrimination, what are the values of output, profit, and consumer surplus?
3. Tuan lives in a town with only one movie rental store. Suppose Tuan's demand for movie rentals per month is \( Q = 16 - 2P \). The movie store currently charges $5 per movie, but is thinking of adding a flat monthly cardholder fee, and dropping the price to $2 per rental. At this new price, what is the largest cardholder fee that Tuan will pay? If the rental store has a constant marginal cost of $2, which strategy is more profitable?


5. Perloff, fourth edition: problem 26 page 382