1) Two firms, the Alliance Company and the Bangor Corporation, produce vision systems. The demand curve for vision systems is

$$P = 200{,}000 - 6(Q_1 + Q_2),$$

where P is the price (in dollars) of a vision system, Q_1 is the number of vision systems produced and sold per month by Alliance, and Q_2 is the number of vision systems produced and sold per month by Bangor. Alliance's total cost (in dollars) is

$TC_1 = 8{,}000Q_1$

Bangor's total cost (in dollars) is

$TC_2 = 12{,}000Q_2$

a. If managers at these two firms set their own output levels to maximize profit, assuming that managers at the other firm hold constant their output, what is the equilibrium price?

b. What is the output of each firm?

c. How much profit do managers at each firm earn?

2) The reservation prices (in dollars) of three classes of demanders (classes *A, B,* and *C*) for Ricky Parton's (a Latin country- western singer) compact disks are given in the table that follows:

Class	CD 1	CD 2
A	11	5
B	8	9
C	9	10

It costs $4 to produce and distribute each compact disk. The company can sell each CD separately, can put them together as a boxed set (that is, as a pure bundle), or can sell them in a mixed bundling format (offer the CDs both separately and as a boxed set). Assume that each demander wants only one of each of the CDs at the reservation price (or at any lower price) and that there are an equal number of demanders in each class. For simplicity, assume that the only costs are those mentioned here.

a. What pricing method would you advise Ricky's company to use?

b. How much better (profi twise) is the best pricing method than the second most profi table pricing method?

3) The demand for a strong demander for a round of golf is
$$P_S = 6 - Q_S$$
where Q_S is the number of rounds demanded by a strong demander when the price of a round of golf is P_S.

The demand for a weak demander for a round of golf is
$$P_W = 4 - Q_W$$
where Q_W is the number of rounds demanded by a weak demander when the price of a round of golf is P_W.

The cost of providing an additional round of golf to either type of golfer is a constant 2.

There is one golfer of each type.
The club has decided that the best pricing policy is a two- part tariff. However, it's your job to tell the club the optimal entry fee and the optimal use fee to maximize the club's profit. The club cannot price discriminate on either the use or the entry fee. The club's fixed cost is 1.

What are the club's optimal use fee and the optimal entry fee?