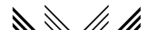


## PRACTICE PROBLEMS 17

### Topic: Price discrimination through bundling

**VERY IMPORTANT:** do **not** look at the answers until you have made a **VERY** serious effort to solve the problem. If you turn to the answers to get clues or help, you are wasting a chance to test how well you are prepared for the exams. I will **not** give you more practice problems later on.



1. A monopolist faces two types of consumers. The inverse demand function of each type-1 consumer is:  $P = 100 - 2Q$  while the inverse demand function of each type-2 consumer is:  $P = 80 - Q$ . The firm's cost function is given by:  $C(Q) = 200 + 10Q$ .

The firm **cannot** tell whether a consumer is of type 1 or type 2. Suppose that the firm decides to offer the following packages:

**PACKAGE 1:** 50 units packaged together for a total price of \$2,500

**PACKAGE 2:** 40 units packaged together for a total price of \$2,200

Assuming that there are 100 consumers of type 1 and 50 consumers of type 2, calculate the monopolist's profits.

2. You have been hired as a consultant for a firm. You are told that the firm faces two types of customers (an equal number,  $n$ , of each type; thus there are  $n$  type 1 and  $n$  type 2 consumers). One type of customers have the following with inverse demand

$$P = 33 - 2Q$$

while the other type has inverse demand

$$P = 25 - Q.$$

The firm's cost function is given by

$$C(Q) = Q.$$

The firm cannot tell which customer belongs to which type. It has been suggested to the manager that one of the following pricing policies should be adopted and you are asked to decide which one maximizes the firm's profits. You have to prepare a report explaining your recommendation. *Your report must specify for every pricing policy what each type of consumer would choose and what the firm's profits would be.*

**POLICY 1:** charge a uniform price of \$17 per unit.

**POLICY 2:** charge a uniform price of \$13 per unit.

**POLICY 3:** offer two different packages. Package 1 is sold for \$220 and contains 12 units. Package 2 is sold for \$136 and contains 8 units.

**POLICY 4:** offer two different packages. Package 1 is sold for \$264 and contains 16 units. Package 2 is sold for \$243 and contains 12 units.