Problem Set 3
Econ 3250

1

A monopoly sells 5 million laptops at a price of $500 per unit with a constant marginal cost of $200. The firm thinks its elasticity of demand is 2. Should the firm raise the price, lower the price, or leave the price the same? Explain your answer.

2

Your company has patented a way to produce a new alternative fuel that can replace gasoline with no carbon emissions. Your company estimates that elasticity of demand is 1.25, and that estimating marginal cost of producing an additional gallon of the fuel costs $2.

a.) What is the profit-maximizing price per gallon?
b.) What happens to the elasticity of demand for your company when the patent expires? What does that imply for price? What about consumer surplus?

3

First time subscribers to the Economist pay a lower rate than repeat subscribers. Is this price discrimination? Of what type?

4

In 2007, Radiohead released their album *In Rainbows* on the internet asking consumers to pay what they wanted. Is this price discrimination? Explain.

5

In many tourist areas, for example, much of the Bahamas, the price paid for food by tourists is different than the price paid by locals. What type of price discrimination does this correspond to? How are firms making this decision? What does this say about relative price elasticities? What additional information would be helpful to verify your answer to this question?

6

Your software company has just completed the first version of SpokenWord, a voice-activated word processor. As marketing manager, you have to decide on the pricing of the new software. You commissioned a study to determine the potential demand for SpokenWord. From this study, you know that there are essentially two market segments of equal size, professionals and students (one million each). Professionals would be willing to pay up to $400 and students up to $100 for the full version of the software. A substantially scaled-down version of the software would be worth $50 to consumers and worthless to professionals. It is equally costly to sell any version. In fact, other than the initial development costs, production costs are zero. Although you know there are two market segments, you cannot directly identify a consumer as belonging to a specific market segment.

(a) What are the optimal prices for each version of the software?

(b) Suppose that, instead of the scaled-down version, the firm sells an intermediate version that is valued at $200 by professionals and $75 by students. Is the firm better off by selling the intermediate version instead of the scaled-down version?