Economics, Law and Ethics: Supervision 1

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Chapter 1

7. Suppose the demand curve is $D(p) = 100 - 2p$. What price would the monopolist set if he had 60 apartments? How many would he rent? What price would he set if he had 40 apartments? How many would he rent?

> Profit $= p \times (100 - 2p) = 100p - 2p^2$.
>
> By differentiating this it can be determined that the maximal point is at $p = 25$ which corresponds to a demand for 50 apartments.
>
> If he only had 40 apartments then he could increase the price to 30 which would reduce the demand to 40.

Chapter 2

6. Suppose that a budget equation is given by $p_1x_1 + p_2x_2 = m$. The government decides to impose a lump-sum tax of u, a quantity tax on good 1 of t, and a quantity subsidy on good 2 of s. What is the formula for the new budget line?

> $(p_1 + t)x_1 + (p_2 - s)x_2 = m - u$

Chapter 3

8. Explain why convex preferences means that "averages are preferred to extremes".

If the curve is convex then minimizing the sum of the x and y parts happens at the middle rather than the extremes, as you deviate from the average position a small decrease in one requires a larger increase in the other to be as preferable.

Chapter 5

3. Suppose that a consumer always consumes 2 spoons of sugar with each cup of coffee. If the price of sugar is p_1 per spoonful and the price of coffee is p_2 per cup and the consumer has m dollars to spend on coffee and sugar, how much will he or she want to purchase?

$$m = 2x \times p_1 + x \times p_2$$
$$x = \frac{m}{2p_1 + p_2}$$

Chapter 15

4. Suppose that the demand curve for a good is given by $D(p) = 100/p$. What price will maximize revenue?

Any price, since revenue is demand multiplied by price which is constant with this demand curve.

Chapter 16

4. The United States imports about half of its petroleum needs. Suppose that the rest of the oil producers are willing to supply as much oil as the United States wants at a constant price of $25 a barrel. What would happen to the price of domestic oil if a tax of $5 a barrel were placed on foreign oil?

It would increase by $5 as they are direct substitutes.

Chapter 34

1. If the cost to a customer from switching long-distance carriers is on the order of \$50, how much should a long-distance carrier be willing to pay to acquire a new customer?

They should pay \$50 so that the customer has no disincentive to move.