Chapter 5 Practice Problems Solutions

Elements of Microeconomics

Discussion section 4

Question 1

Part A

Based on your intuition, choose 3 goods for which you think:

1. Demand is inelastic
2. Demand is elastic
3. Supply is inelastic
4. Supply is elastic

It might be helpful to add a bit of justification. Does it matter what *time frame* you're thinking about? Does the *scope of the market* matter? Any other factors?

Part B

Think about the market for Ford F150s. Do you expect demand to be elastic or inelastic? What about supply? Does this depend on any qualifiers about the time frame and the scope of the market?

Question 2

Part A

Take two points on a demand curve:

- $P_A = 12$ and $Q_A = 60$
- $P_B = 8$ and $Q_B = 80$

Moving from A to B, what is the price elasticity of demand? Show each step clearly.

Moving from B to A, what is the price elasticity of demand? Again, show each step.

Part B

Using the mid-point formula, answer the following questions:

1. What is the new base price?
2. What is the new base quantity?
3. What is the % change for quantity?
4. What is the % change for price?
5. What is the price elasticity of demand? Does it matter which point we treat as the start?

Question 3

Draw example demand curves which are:

- Elastic
- Inelastic
- Unit elastic
- Perfectly elastic
- Perfectly inelastic

and provide the intuition behind the shape of each.

Question 4

Say price for some good doubles from P_A to $P_B = 2 * P_A$. How does total revenue change when:

- Demand is elastic: quantity decreases by 75%
- Demand is inelastic: quantity decreases by 25%
- Demand is unit elastic

Price	Q_D **(Business)**	Q_D **(Vacation)**	Q_S **(Firms)**
\$150	2,100	1,000	2,300
\$200	2,000	800	2,400
\$250	1,900	600	2,500
\$300	1,800	400	2,600

Table 1: Market for airline tickets

Question 5

Say we have a linear demand curve:

- Quantity demanded is 0 when price is 100
- Quantity demanded is 10 when price is 20

1. Calculate the formula for the demand curve (slope and intercept) and draw graphically
2. Is the elasticity constant? Why or why not?
3. Pick a few example points, and use the midpoint formula to check the elasticity when:
   (a) Price is close to 20
   (b) Price is close to 0
   (c) Price is around 8
4. How will total revenue vary as price moves from 0 to 100?

Question 6

Let's think about the market for hotel rooms, where we have some people searching for rooms for business travel, others for vacation, and some firms providing hotel rooms:

Which group do you expect to be elastic? Inelastic? Why?

Calculate the elasticities, and say when the market is inelastic. If you are comfortable with the arithmetic, you may just want to do these calculations in an excel spreadsheet and focus on the intuition.