AP MICROECONOMICS • EXERCISE SHEET

2.3 Price Elasticity of Demand

Name: ____________ Class: ________ Date: __________ **Total: 9 marks**

KEY WORDS elastic 富有弹性 • inelastic 缺乏弹性 • price elasticity of demand 需求价格弹性 • total revenue 总收入 • total revenue test 总收益检验

Objective

Build the skills to answer exam questions on **price elasticity of demand**.

You must be able to:

- define **price elasticity of demand (PED)** 需求价格弹性
- calculate PED using the **midpoint (arc) method** 中点法
- classify demand as **elastic**, **inelastic**, or **unit elastic**
- use the **total revenue test** 总收益检验

1 Worked examples

Study these first. Each one shows the method for a question type used later.

PED

$$\text{PED} = \frac{\%\Delta Q_d}{\%\Delta P},$$

using the **midpoint method**, where each percentage change is divided by the **average** of the two values. Take the absolute value.

Classification

$|\text{PED}| > 1$ elastic; < 1 inelastic; $= 1$ unit elastic.

Total revenue test

If demand is **elastic**, cutting price **raises** total revenue; if **inelastic**, raising price raises revenue.

2 Practice

2.1 Define price elasticity of demand. [1]

2.2 Price rises from \$10 to \$12 and quantity demanded falls from 100 to 80. Find the PED (midpoint method). [2]

2.3 State whether demand is elastic or inelastic if $|\text{PED}| = 0.5$. [1]

3 Exam-style questions

3.1 Demand is elastic when $|\text{PED}|$ is [1]

- **A** less than 1
- **B** equal to 1
- **C** greater than 1
- **D** zero

3.2 If demand is inelastic, raising the price will [1]

- **A** raise total revenue
- **B** lower total revenue
- **C** leave revenue unchanged
- **D** raise quantity demanded

3.3 A good has few substitutes and takes only a small share of income.

(a) State whether its demand is likely elastic or inelastic. [1]

(b) If the firm wants more revenue, state whether it should raise or lower the price. [1]

(c) Name one determinant of PED. [1]

Solutions

2.1 the responsiveness of quantity demanded to a change in price.

2.2 $\%\Delta Q = \dfrac{-20}{90} = -22\%$; $\%\Delta P = \dfrac{2}{11} = 18\%$; $|\text{PED}| = \dfrac{22}{18} \approx 1.2$.

2.3 inelastic.

3.1 **C**.

3.2 **A**.

3.3 (a) inelastic. (b) raise the price. (c) any one of: availability of substitutes, share of income, time.