Midpoint elasticity practice with answers

Work through three price elasticity of demand exercises. For each percentage change, divide the change by the average of the two original values. Keep the sign until you classify the result, then use the magnitude. Try the questions before looking at the worked solutions.

Practice questions

1. Price rises from 10 to 12 and quantity falls from 100 to 80. Find price elasticity of demand and compare revenue.

2. Price rises from 8 to 10 and quantity falls from 120 to 108. Calculate elasticity, classify it, and find the change in total revenue.

3. Reverse the first observation pair. Price now falls from 12 to 10 and quantity rises from 80 to 100. What changes in the answers?

Worked answers

1. Price change is 2/11 = +18.18%. Quantity change is -20/90 = -22.22%. Elasticity is -1.22, so demand is elastic over this interval. Revenue goes from 1,000 to 960. In this example a higher price does not make up for the drop in quantity.

2. Price change is 2/9 = +22.22%. Quantity change is -12/114 = -10.53%. Elasticity is about -0.474, so demand is inelastic. Revenue increases from 8 x 120 = 960 to 10 x 108 = 1,080.

3. The percentage changes reverse signs, producing -18.18% for price and +22.22% for quantity. Their ratio is still -1.22. Revenue now rises from 960 to 1,000. The two averages in the midpoint method remain the same whichever direction you take.

Check the interpretation

A midpoint elasticity measures responsiveness over an interval. It can differ from elasticity at one point on the same demand curve. In a real market, other influences can move between observations. These exercises give you comparable pairs and treat the differences as movements along a demand curve.

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