**Price Elasticity of demand**

**Activity 1**

Work out the PED for each, and comment on your result.

1. The price of DVDs was £200, and the quantity demanded was 4m. Next year the price falls to £180 and the quantity demanded rises to 6m.
2. The price of Pens was £1, and the quantity demanded was 1m. Next year the price rises to £1.10 and the quantity demanded falls to 950,000.
3. The price of The Times was 40p, and the quantity demanded was 2m. Next year the price falls to 30p and the quantity demanded rises to 2.2m
4. WH Smith have recent reduced the price of its Kobo Mini eReader from £60 to £40. They predict that sales of the eReader will increase from 15,000 units a month to 25,000 a month. What is the price elasticity of demand for this price change?
5. A business that makes suitcases aimed at holidaying tourists has increased its prices by 5%. As a consequence, they have seen a drop in sales between January and March by 15%. Calculate the price elasticity of demand and comment on the effect on revenue.

**Price Elasticity of demand**

**Activity 2**

RCO Ltd is a UK based electronics manufacturer and retailer. Its main products are Netbook computers, PCs and Electronic Calculators.  The current price of the Netbook is £500, the PC is £800 and the calculator is £40. This year the firm sold 10,000 Netbooks, 20,000 PCs and 1 million calculators.

In an attempt to improve revenue the managers of the firm have decided to increase all prices by 10%. Market research has suggested that the price elasticity of demand for each product is:

Netbook: 1.5

PC: 2.5

Calculator:  0.6

You have been asked to evaluate the planned price increases. (Support any arguments with calculations.)

1. Calculate the new quantity demanded for each product, after the 10% price increase.
2. Calculate the new revenue for each product, after the 10% price increase.
3. Work out whether the 10% price increase has been successful for each product (in terms of revenue) when compared before and after the price rise.

**Price Elasticity of demand**

**Activity 3**

A local firm produces three types of Pizza, for delivery to homes in the area. The owners have completed research, to discover the demand curves for each of the three pizzas. The schedules are shown below: (Quantities are per week).

|  |  |  |  |
| --- | --- | --- | --- |
| **Price** | **Pizza A (Qd)** | **Pizza B (Qd)** | **Pizza C (Qd)** |
| 12 | 800 | 0 | 100 |
| 11 | 840 | 0 | 200 |
| 10 | 880 | 400 | 300 |
| 9 | 920 | 800 | 400 |
| 8 | 960 | 1200 | 500 |
| 7 | 1000 | 1600 | 600 |
| 6 | 1040 | 2000 | 700 |
| 5 | 1080 | 2400 | 800 |

|  |
| --- |
|  |

Plot the three demand curves, on one graph.

1. Calculate PED for all three pizzas, if the price was to fall from £10 to £9.
2. For Pizza C only, what price must be charged if the firm wishes to maximize its sales revenue?

**Price Elasticity of demand ANSWERS**

**Activity 1**

Work out the PED for each, and comment on your result.

1. The price of DVDs was £200, and the quantity demanded was 4m. Next year the price falls to £180 and the quantity demanded rises to 6m.
 ***((6-4)/4) / ((180-200)/200) = +50%/-10%
= PED -5***
2. The price of Pens was £1, and the quantity demanded was 1m. Next year the price rises to £1.10 and the quantity demanded falls to 950,000.

***((0.95-1)/1) / ((1.10-1/1) = -5%/+10%
= PED 0.5***
3. The price of The Times was 40p, and the quantity demanded was 2m. Next year the price falls to 30p and the quantity demanded rises to 2.2m

***((2.2-2)/2) / ((0.30-0.40/0.40) = +10%/-25%
= PED 0.4***
4. WH Smith have recent reduced the price of its Kobo Mini eReader from £60 to £40. They predict that sales of the eReader will increase from 15,000 units a month to 25,000 a month. What is the price elasticity of demand for this price change?

***(25,000-15,000)/15,000))x100
(40-60)/60))x100

% change in demand = +66%
% change in price = -33%
PED = 2***
5. A business that makes suitcases aimed at holidaying tourists has increased its prices by 5%. As a consequence, they have seen a drop in sales between January and March by 15%. Calculate the price elasticity of demand and comment on the effect on revenue.

***-15%/+5% = PED 3

PED of 3 means that these suitcases are elastic and so a change in price causes a proportionately larger change in the quantity demanded. Revenue will therefore fall.***

**Price Elasticity of demand**

**Activity 2**

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In an attempt to improve revenue the managers of the firm have decided to increase all prices by 10%. Market research has suggested that the price elasticity of demand for each product is:

Netbook: 1.5 ***Old price £500 New price £550 Old QD 10,000***

PC: 2.5 ***Old price £800 New price £880 Old QD 20,000***

Calculator:  0.6 ***Old price £40 New price £44 Old QD 1,000,000***

You have been asked to evaluate the planned price increases. (Support any arguments with calculations.)

1. Calculate the new quantity demanded for each product, after the 10% price increase.
2. Calculate the new revenue for each product, after the 10% price increase.
3. Work out whether the 10% price increase has been successful for each product (in terms of revenue) when compared before and after the price rise.

**Netbooks: (8500-10,000)/(10,000)/((550-500)/500)
=-15%/+10%
= PED -1.5**

**Old revenue: 10,000 x £500 = £5,000,000
New revenue: 8,500 x £550 = £4,675,000**

**PCs: (15,000-20,000)/(20,000)) / ((880-800)/800)
=-25%/+10%
= PED -2.5**

**Old revenue: 20,000 x £800 = £16,000,000
New revenue: 15,000 x £880 = £13,200,000**

**Calculators: (940,000-1,000,000)/(1,000,000)) / ((44-40)/40)
=-6%/+10%
= PED -0.6**

**Old revenue: 1,000,000 x £40 = £40,000,000
New revenue: 940,000 x £44 = £41,360,000**

**PRICE CHANGE WAS ONLY SUCCESSFUL (IN TERMS OF INCREASING REVENUE) FOR THE CALCULATOR**

 **Price Elasticity of demand**

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Plot the three demand curves, on one graph.

1. Calculate PED for all three pizzas, if the price was to fall from £10 to £9.
2. For Pizza C only, what price must be charged if the firm wishes to maximize its sales revenue?

***Pizza A***

***((920-880)/880) / ((9-10/10)) = 4.5%/-10%
= PED -0.45***

***Pizza B***

***((800-400)/400) / ((9-10/10)) = 100%/-10%
= PED -10***

***Pizza C***

***((400-300)/300) / ((9-10/10)) = 33.33%/-10%
= PED -3.33***

**Revenue can be maximised by charging either £6 or £7 and will result in revenue of £4,200**