Elasticity revisited:

First of all remember from your first year that elasticity is divided into various categories. For example, you have price elasticity of demand, then you have price elasticity of supply, then income elasticity, then cross elasticity. So in your mind you should be clear about which elasticity you are talking about. This is crucial!

Now, here is the deal about price elasticity of demand (PED):

1) It is not the slope of the demand curve i.e. the slope of the curve is $\Delta Q/\Delta P$
2) It is the $\%\Delta Q$ / $\%\Delta P$ (i.e. the % change in quantity demanded stemming from a 1 % change in price. This is also called the ***responsiveness*** of quantity demanded to price changes
3) We use % changes because often we are dealing with different units (e.g. price is in Rands and Quantity in kg)
4) So we are asking: if price changes by 1 %, by how may percent will quantity demanded change?
5) **You can do the algebra and manipulate this equation and see that: $\%\Delta Q / \%\Delta P = [\Delta Q/Q] / [\Delta P/P] = [\Delta Q/\Delta P] * [P/Q] = [slope] * [P/Q]$**
6) **$[\Delta Q/\Delta P]$ is the slope of the demand curve**
7) Realise that the PED contains the slope BUT it is not the slope
8) While the slope of a linear curve is constant, the PED is not constant along the curve
9) Now the PED, can give us both positive and negative numbers, depending on the slope of the curve
10) For a demand curve the slope has a negative value, so sometimes people put a negative sign before PED
11) But it is easier to just quote PED in absolute terms / /. Absolute numbers are positive.
12) The positive number tells us by how much (i.e. magnitude) the change is. Not to which direction, which could be different for a demand versus the supply curve (their slopes have different signs)
13) If quantity demanded does not respond to changes in price, then we have inelastic demand. For inelastic demand, PED is less than 1.
14) If quantity demanded responds to changes in price, then we have elastic demand. For elastic demand, PED is greater than 1.
15) For examples on these types of elasticities read page 127 of your textbook
16) For the extreme cases we have perfectly inelastic demand (PED = 0) and perfectly elastic demand ($PED=\infty$)
17) Earlier (in number 7) we said PED is not the same along the demand curve (it is not the slope)
18) Now given some demand curve, you can calculate what the PED is along the curve
19) Where the curve intercepts the Y-axis (PED must be ∞ --- i.e. perfectly elastic), where the curve intercepts the X-axis (PED must be 0--- perfectly inelastic)
20) PED = 1, at a point from where you can draw a line that divides the curve into two equal parts or that divides the horizontal & vertical distances into two (revise your first year textbook work, page 156)
21) Now you should be able to read and understand what's happening with price elasticity of supply (PES) and income elasticity, etc., the same logical thinking applies, expect you are now dealing with different variables.

The term *elasticity* is used to describe the way in which demand reacts to a fall in the price of a product.

6.1 Look at Figure 16.

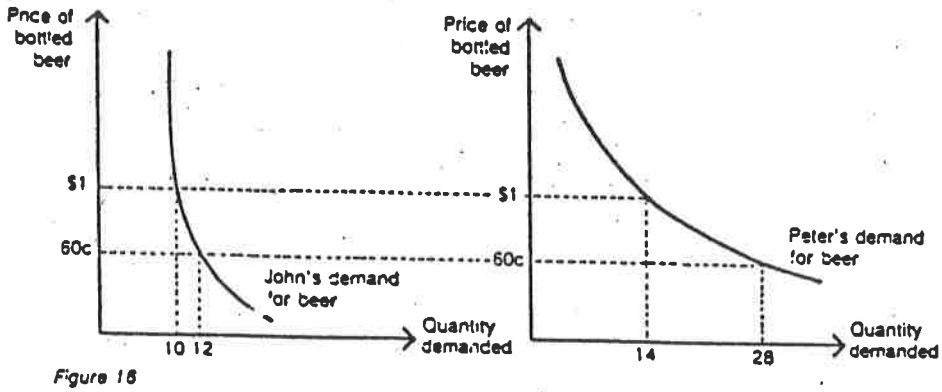

Figure 16

a Assume that the price of beer per bottle falls from $1 to 60c. By how much does each consumer's demand for beer increase?

b Which consumer's demand has been more responsive (elastic) to the price reduction? Don't be frightened of the word elasticity. All it means is how responsive you are to a price change.

Clearly Peter's demand was more responsive (elastic) than John's. The price fell by the same amount for both. The quantity Peter demanded increased from 14 to 28 bottles (100 per cent). The quantity John demanded increased from 10 to 12 bottles (20 per cent).

The elasticity of demand determines whether the total *value* of all sales increases, decreases, or stays the same, when the price of the product falls. The total value of sales is the firm's total *revenue*. This equals the price of the good multiplied by the number of goods sold.

In Peter's case, when the price was $1, he purchased 14 bottles. Total revenue earned from sales to Peter was $1 × 14 = $14.

After the price cut he paid 60c for 28 bottles, thus spending $16.80 (ie 60c × 28). In this case the fall in the price of beer was more than offset by the increase in Peter's demand.

What of John? Initially he paid $1 for 10 bottles, which equals $10. Then he paid 60c for 12 bottles, which equals $7.20. In this case the fall in price was not offset by an increase in demand.

ECONOMICS

ELASTICITY OF DEMAND

Most people realise that an increase in price leads to less goods being demanded but what is often not realised is that commodities differ in the degree to which quantity bought responds to changes in each respective price.

The degree to which quantity demanded responds to a change in price is known as elasticity of demand.

If a small change in price causes a relatively large change in the quantity demanded we say demand is elastic.

If the change in quantity demanded is relatively small we say demand is inelastic.

Elasticity of demand can be measured by the following ratio:

$$\text{Elasticity of demand} = \frac{\% \text{ change in quantity demanded}}{\% \text{ change in price}}$$

Where this ratio is greater than 1 , demand is elastic.
Where this ratio is less than 1 , demand is inelastic.
Where this ratio is equal to 1 , demand has unitary elasticity

CASES OF INELASTIC DEMAND:

Necessities of life; Addictive goods - e.g., cigarettes; goods with no close substitute goods which consumer spends only a small portion of his income on.

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