eLearneconomics: Income elasticity of demand (1)

Student response

(a) Define 'income elasticity' and give the formula to calculate income elasticity of demand.

(b) Calculate the income elasticity of demand for each question using the midpoint method. Show your working.

(i) When an individual's disposable income falls from $1 000 to $900 per week, their purchases of a product increase from 12 to 16.

(ii)

Previous income	$80 000
New income	$100 000
Previous purchases	100
New purchases	110

(iii)

	Quantity demanded	Income ($)
New situation	5	3 000
Old situation	9	4 000

(iv) The quantity demanded of a product fell from 16 to 10 when a consumer's income fell from $600 to $500.

eLearneconomics: Income elasticity of demand (1a)

Solution

(a) Define 'income elasticity' and give the formula to calculate income elasticity of demand.

Measures the responsiveness of quantity demanded to changes in a consumer's/individual's income.

$$Ey = \frac{\left(\frac{\Delta QD}{\text{midpt QD}}\right)}{\left(\frac{\Delta Y}{\text{midpt Y}}\right)}$$

(b) Calculate the income elasticity of demand for each question using the midpoint method. Show your working.

(i) When an individual's disposable income falls from $1 000 to $900 per week, their purchases of a product increase from 12 to 16.

$$Ey = \frac{\left(\frac{+4}{14}\right)}{\left(\frac{-100}{950}\right)} = -2.71$$ inferior good

(ii)

Previous income	$80 000
New income	$100 000
Previous purchases	100
New purchases	110

$$Ey = \frac{\left(\frac{10}{105}\right)}{\left(\frac{20\,000}{90\,000}\right)} = 0.428 = 0.43$$ normal necessity

(iii)

	Quantity demanded	Income ($)
New situation	5	3 000
Old situation	9	4 000

$$Ey = \frac{\left(\frac{-4}{7}\right)}{\left(\frac{-1\,000}{3\,500}\right)} = 2.00$$ normal luxury

(iv) The quantity demanded of a product fell from 16 to 10 when a consumer's income fell from $600 to $500.

$$Ey = \frac{\left(\frac{-6}{13}\right)}{\left(\frac{-100}{550}\right)} = +2.54$$ normal luxury