1.13 Income and Cross Elasticities of Demand: 30-minute Pack

Total Marks

AQA 7136 · Calculators not allowed · about 30 minutes

Name: _____ Date: ____ / ____ / _____

Answer all questions in full sentences where required. Show all working for calculations. Total time guidance 30 minutes.

1 The income elasticity of demand for a restaurant's tasting menus is +2.5. Average household income is expected to rise by 6%. The restaurant currently sells 4,000 tasting menus a month. Calculate the expected change in quantity demanded, as a percentage, and the new monthly sales. Show your working.

(Total for Question 1 is 3 marks)

2 Calculate the income elasticity of demand for a luxury fashion brand in the UK market where average household income rises from £20,000 to £24,000 and quantity demanded rises from 50 units to 65 units. Use whole-number arithmetic and show working.

(Total for Question 2 is 3 marks)

3 Classify the following goods by income elasticity using the table: Good A has YED = 0.4; Good B has YED = 2; Good C has YED = -1. For each good, state whether it is inferior, a necessity, or a luxury and give a one line reason relating magnitude to the classification.

(Total for Question 3 is 3 marks)

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4 Calculate the cross elasticity of demand between printers and ink cartridges when the price of printers rises from £80 to £100 and the quantity demanded of ink cartridges falls from 500 units to 400 units. State the sign and classification.

(Total for Question 4 is 2 marks)

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5 Data extract for analysis, named category: instant noodles in a UK recession. Extract: Average household income falls by 10% during a mild recession. Sales data show quantity demanded of instant noodles rises from 1,200 packs per week to 1,320 packs per week. Analyse how this change in income affects demand for instant noodles. Use calculations and discuss what this implies for the classification of instant noodles and the likely implications for firms selling them. (Answer worth 8 marks.)

(Total for Question 5 is 8 marks)

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Mark scheme · 1.13 Income and Cross Elasticities of Demand: 30-minute Pack

Question 1

% change in quantity demanded = YED x % change in income = 2.5 x 6	**M1**
+15%	**A1**
new sales = 4,000 x 1.15 = 4,600 menus a month	**A1**

Answer: Quantity demanded is expected to rise by 15%, so sales rise from 4,000 to 4,600 menus a month.

Question 2

calculate % change in income = (24000 - 20000) / 20000 x 100 = 20%	**M1**
calculate % change in quantity = (65 - 50) / 50 x 100 = 30%	**M1**
YED = 30% / 20% = 1.5, indicating a luxury good (YED > 1)	**A1**

Answer: YED = 1.5 (30% / 20%), so the fashion brand is a luxury good.

Question 3

Good A: YED = 0.4, classified as a necessity because 0 < YED < 1	**B1**
Good B: YED = 2, classified as a luxury because YED > 1	**B1**
Good C: YED = -1, classified as an inferior good because YED < 0	**B1**

Answer: A necessity (0.4, 0<YED<1); B a luxury (2, YED>1); C inferior (-1, YED<0).

Question 4

calculate % change in price of printers = (100 - 80) / 80 x 100 = 25%; % change in ink demand = (400 - 500) / 500 x 100 = -20%	**M1**
XED = -20% / 25% = -0.8, negative so printers and ink are complements	**A1**

Answer: XED = -0.8, negative; printers and ink cartridges are complements.

Question 5

Level 1 Simple calculation or assertion with minimal development, for example a correct percentage change calculated with little or no interpretation.	**1-2**
Level 2 Correct calculation and basic interpretation, linking the sign of YED to classification, with one development or consequence for firms.	**3-5**
Level 3 Detailed calculation, clear classification as inferior good, and analysis of firm implications including pricing, demand stability and possible strategic responses, with evidence from the data.	**6-8**

Indicative content:

- Calculate % change in income = -10%
- Calculate % change in quantity = (1320 - 1200) / 1200 x 100 = +10%
- YED = +10% / -10% = -1.0, negative value indicates instant noodles are an inferior good in this data
- Interpretation: as income falls, demand rises; magnitude of 1.0 implies a unitary negative response, fairly responsive to income changes
- Implications for firms: demand for instant noodles may rise during recessions, suggesting countercyclical sales and potential for stable revenues or targeted marketing to capture increased demand
- Further analysis: firms might avoid price increases during recessions, consider cost leadership, increase distribution to discount retailers, and anticipate supply adjustments; consider limitations such as short-term vs long-term classification and that other factors could influence demand

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