

YED Answers

Calculations for HP3

Income elasticity of demand (YED)

1 ■ $YED = \frac{\% \Delta \text{Quantity demanded}}{\% \Delta \text{Real income}}$

■ $YED = \frac{+1\%}{+3\%} = +0.33$

- This suggests that tea is a normal good (or necessity good).

Award up to 2 marks for the calculation of the YED (correct answer and working out).

Award up to 1 further mark for an appropriate commentary.

- 2 a ■ The YED is known to be +0.14 while real income has increased by 3.5%.
■ Substituting the known values into the YED formula gives: $x \div +3.5\% = +0.14$.
■ Hence, $x = +0.49\%$, i.e. the demand for cigarettes has risen by 0.49%.

Award 1 mark for a brief answer that shows some understanding.

Award 2 marks for a clear understanding of what happens to the demand for cigarettes following the increase in real household income.

- b ■ As $YED = +0.14$, the demand for cigarettes has risen by 0.49% following a 3.5% rise in real income, i.e. the demand for cigarettes is income inelastic.
■ This suggests that cigarettes are normal goods (a necessity for people who demand the product).

Award 1 mark for a brief answer that shows some understanding.

Award 2 marks for a clear understanding of why cigarettes are normal goods as the YED is +0.14.

- 3 a ■ $YED = +3.25$ with the percentage change in income expected to be +1%.
■ Hence, this year's sales volume increases by $x \div 1\% = 3.25\%$.
■ $x = 3.25\%$
■ So, sales are expected to be $50,000 \times 1.0325 = 51,625$ units.

Award 1 mark for the correct answer and 1 mark for showing the working out.

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Calculations for HP3

- b ■ YED = -6.5 with the percentage change in income expected to be +1%.
- Hence, this year's sales volume falls by $x \div 1\% = -6.5\%$.
- $x = -6.5\%$ (the percentage change in the demand for sausages).
- So, sales are expected to be 2 million \times 0.935 = **1.87 million units**.

Award 1 mark for the correct answer and 1 mark for showing the working out.

4 ■
$$\text{YED} = \frac{\% \Delta \text{Quantity demanded}}{\% \Delta \text{Household income}}$$

- $\% \Delta \text{Household income} = \frac{\$29,400 - \$28,000}{\$28,000} = +5\%$

- $\% \Delta \text{Quantity demanded} = \frac{8 - 6}{6} = +33.33\%$

- $\text{YED} = \frac{+33.33\%}{+5\%} = +6.67$

- This suggests that (visits to) the cinema is a luxury good that is highly dependent on the average level of household income in the economy.

Award up to 2 marks for the calculation of the YED (correct answer and working out).

Award up to 1 further mark for an appropriate commentary.

- 5 a ■ Inferior good: Soft drinks (accept public transportation as an inferior service).
- Luxury good: Domestic holidays.

Award 1 mark for each correctly identified answer, up to the maximum of 2 marks.

- b Suppliers of domestic holidays gain the most when average income in the economy rises. In this case, a 10% increase in average household income would cause demand for domestic holidays to rise by 13.6%. However, they would also suffer the most during an economic downturn (recession).

Award 1 mark for a brief answer that shows some understanding.

Award 2 marks for a clear understanding of why suppliers of domestic holidays would gain the most.

- c Providers of soft drinks would gain the most from an economic recession when average household income falls. The demand for soft drinks would increase by 3.3% for each 10% drop in average household income. The demand for public transportation would also increase, but only by 2.2% for each 10% drop in average household income. Hence, suppliers of soft drinks gain the most from an economic recession.

Award 1 mark for a brief answer that shows some understanding.

Award 2 marks for a clear understanding of why suppliers of soft drinks would gain the most.

d ■
$$\text{YED} = \frac{\% \Delta Q_d}{\% \Delta Y}$$

- YED for public transportation = $-0.22 = \frac{x}{+3.5} = -0.77\%$ change in demand for public transportation

- YED for domestic holidays = $+1.36 = \frac{x}{+3.5} = +4.76\%$ change in demand for domestic holidays

Award 1 mark for the correct answer and 1 mark for showing the working out.

- e The YED for petrol (gas) is +0.25, i.e. highly income inelastic. This means that the demand for petrol (gas) in the country is largely unaffected by changes in income, i.e. petrol (gas) is a necessity. Thus, the government can tax this without really affecting the quantity demanded, so there is little, if any, knock-on effect on jobs in the petroleum industry. By contrast, demand for domestic holidays is income elastic so taxing these (which raises the price of domestic holidays) would cause a greater than proportional drop in demand. This would have unintended negative consequences on the industry.

Award 1 mark for a brief answer that shows some understanding.

Award 2 marks for a good understanding of why the government is more likely to tax petrol (gas) rather than suppliers of domestic holidays.

Award 3 marks for a good understanding of why the government is more likely to tax petrol (gas) rather than suppliers of domestic holidays, with appropriate use of the data in the table.