2 Which **one** of the following is an external benefit when children receive the measles vaccination?

A The manufacturer of the measles vaccine gains more revenue from selling the vaccine

B Children who are vaccinated against measles will be protected from getting measles

C Children around those vaccinated against measles will be less likely to get measles

D The manufacturer of the measles vaccine must pay the cost of producing the vaccine

(Total for Question 2 = 1 mark)

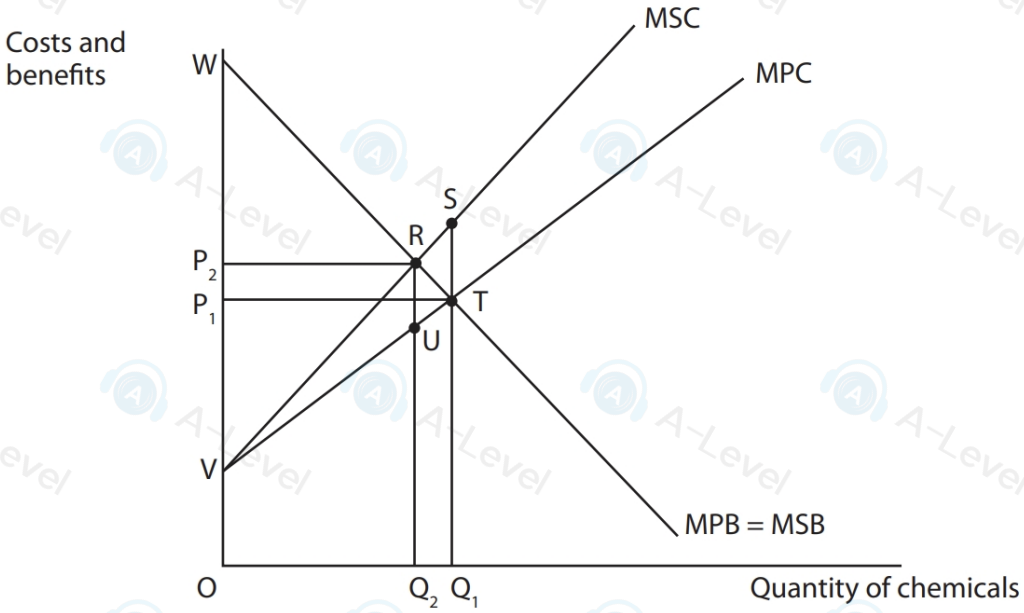
9 The table shows the estimated external costs of pollution per capita in selected countries.

Country	External cost of pollution per capita ($)
Germany	950
USA	1 200
South Africa	1 300
Brazil	1 500

With reference to the table, explain **one** reason why the external costs of pollution might be different between these countries.

(Total for Question 9 = 4 marks)

4 The diagram shows the market for the production of chemicals.



Which **one** of the following can be deduced from the diagram?

- ☒ **A** The social optimum quantity is Q_1 and price is P_1
- ☒ **B** The market equilibrium quantity is Q_2 and price is P_2
- ☒ **C** The welfare loss area is RTU
- ☒ **D** The welfare loss area is RST

(Total for Question 4 = 1 mark)

8 The table shows the amount of greenhouse gas emissions resulting from the production of three meat products.

Meat	Greenhouse gas emissions per kilogram (kg) of meat produced
Beef	60 kg
Lamb	24 kg
Poultry	6 kg

With reference to the table, explain what is meant by 'external costs of production'.

14 In 2017 the rate of unemployment in South Africa was 27.7%. The Government is committed to reducing the unemployment rate by increasing spending on education and training.

Evaluate the use of supply-side policies as a means of reducing unemployment.

(Total for Question 14 = 20 marks)

7 According to the World Health Organization vaccinations prevent more than 2 million deaths each year. However, in 2014 there were 18.7 million infants not receiving any vaccinations.

Draw an externalities diagram to illustrate the underconsumption of vaccinations.

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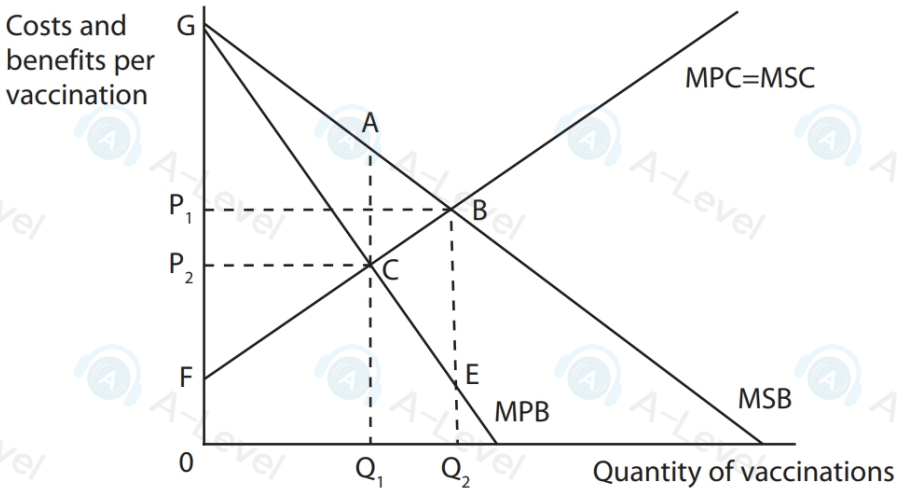
4 The diagram shows the market for vaccinations against measles.



Which **one** of the following can be deduced from the diagram?

- ☒ **A** The social optimum output is Q_1
- ☒ **B** The market equilibrium output is Q_2
- ☒ **C** Welfare gain is shown by the area BCE
- ☒ **D** Welfare gain is shown by the area ABC

(Total for Question 4 = 1 mark)

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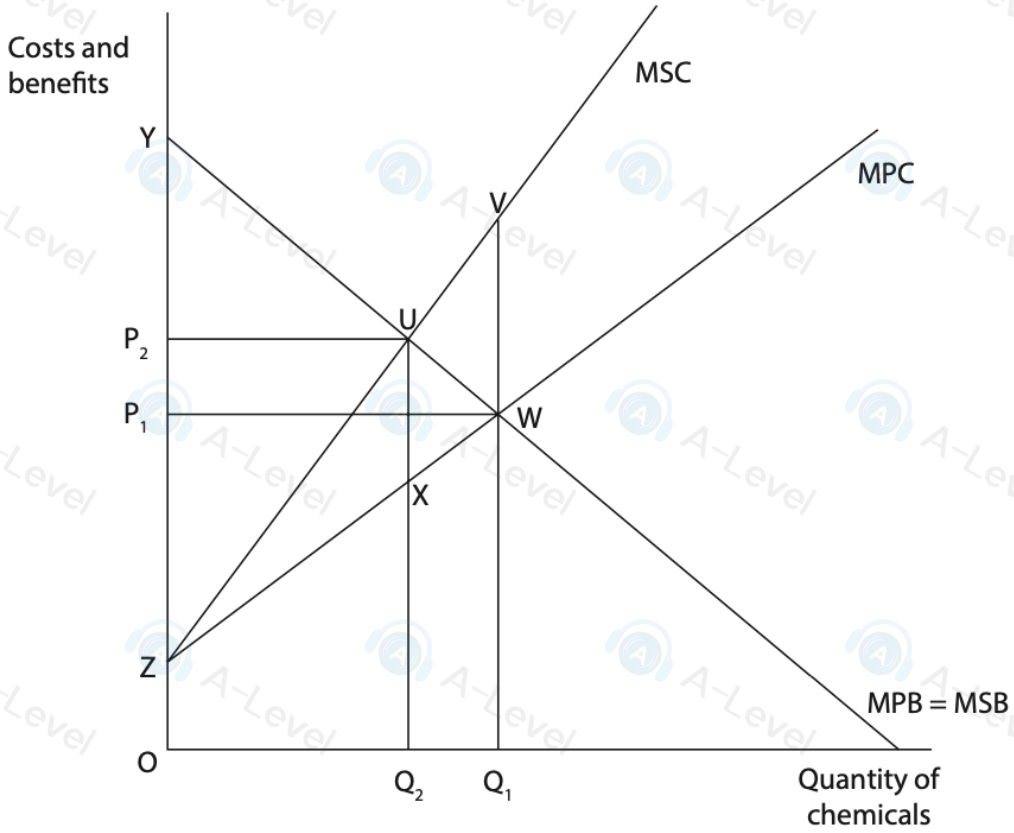
4 The diagram shows an externalities diagram for the production of chemicals.



Which **one** of the following shows the area of welfare loss?

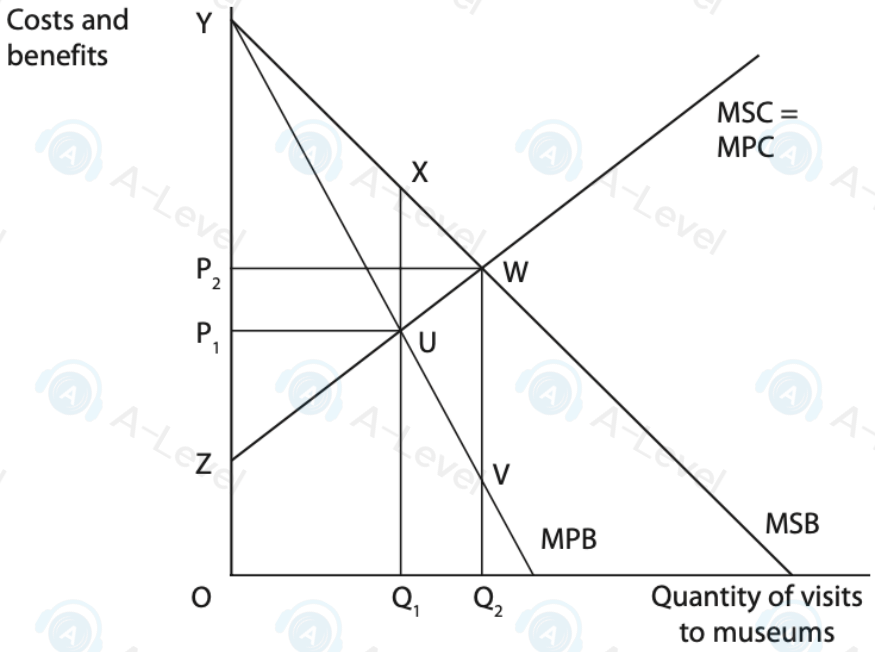
- ☒ **A** UVW
- ☒ **B** UWX
- ☒ **C** ZP_1W
- ☒ **D** ZP_2U

(Total for Question 4 = 1 mark)

7 In 2021 the number of citizens taking online education courses in the Philippines was 1 300 000.

Draw a diagram to illustrate the likely external benefits resulting from online education in the Philippines.

4 The diagram shows the market for museum visits in Spain.



Which **one** of the following can be deduced from this diagram?

- ☒ **A** The market equilibrium quantity is at Q_2
- ☒ **B** The social optimum quantity is at Q_1
- ☒ **C** The welfare gain area would be equal to UVW
- ☒ **D** The welfare gain area would be equal to UWX

(Total for Question 4 = 1 mark)

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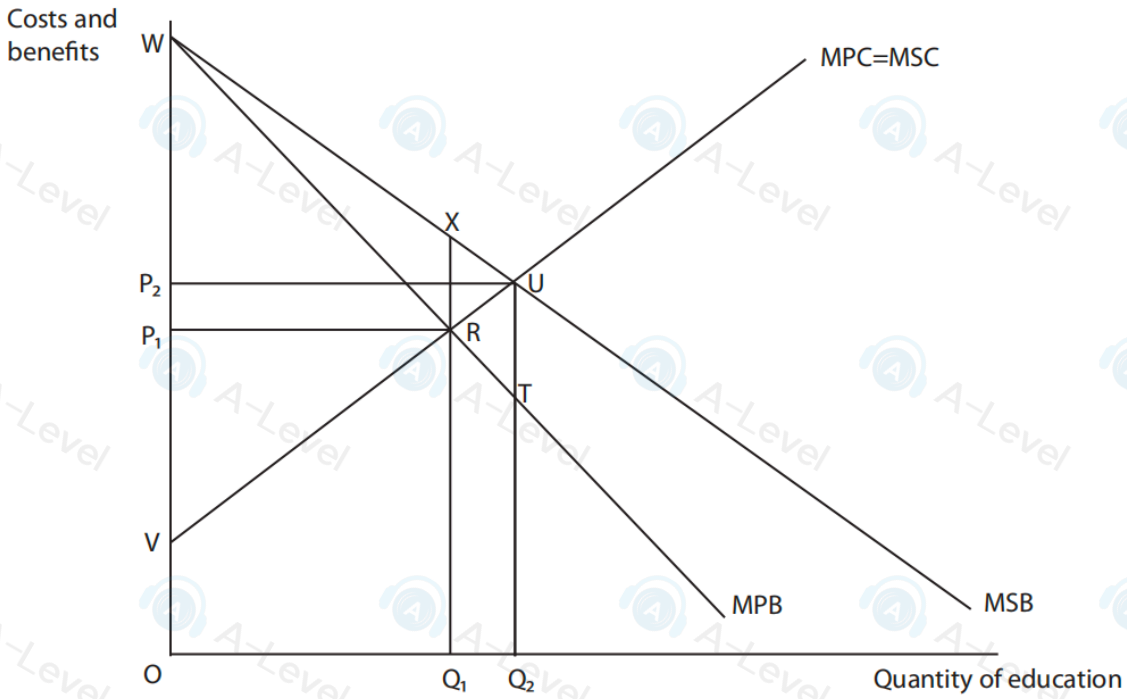
4 The diagram shows the market for education.



Which **one** of the following can be deduced from the diagram?

- ☒ **A** The welfare gain area is RUT
- ☒ **B** The welfare gain area is RUX
- ☒ **C** The social optimum quantity is Q_1 and price is P_1
- ☒ **D** The market equilibrium quantity is Q_2 and price is P_2

(Total for Question 4 = 1 mark)

13 'The HPV vaccine is recommended for all adults in the USA because it reduces the risk of cancer by 88%. If the HPV vaccine was given to all adults 925 000 cases of cancer would be prevented. However only 18.3% of adults were vaccinated between 2011 and 2014 preventing 170 000 cases of cancer.'

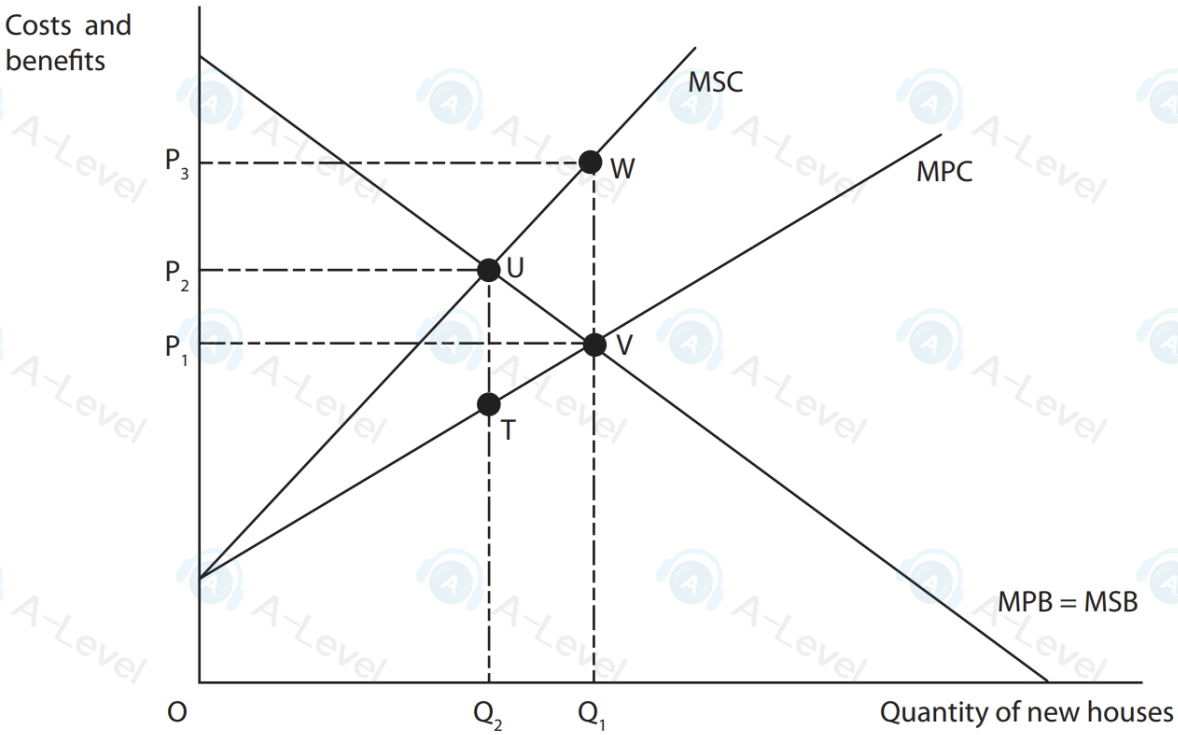
Evaluate why only 18.3% of adults were vaccinated.

(Total for Question 13 = 20 marks)

7 According to research, university education results in substantial external benefits. These include longer life expectancy, less crime, lower welfare payments and the adoption of new technology.

Draw a diagram to illustrate these external benefits.

4 The diagram shows the market for new house construction.



The housing construction industry is a major source of pollution.

Which **one** of the following can be deduced from the diagram?

- ☒ **A** The social optimum output is Q_1
- ☒ **B** The market equilibrium output is Q_2
- ☒ **C** Welfare loss is shown by the area UVT
- ☒ **D** Welfare loss is shown by the area UWV

(Total for Question 4 = 1 mark)

14 In 2019 the proportion of 25 to 34-year-old people who had received university education was 70% in South Korea. In contrast it was 50% in the USA and only 28% in Italy.

Evaluate possible microeconomic reasons why education might be underconsumed.

(Total for Question 14 = 20 marks)

9 Emiliana Lucas owns a farm in Tanzania on which she grows sunflowers. In 2020 Tania, her neighbour, started a honey bee farm. The honey bees pollinated Emiliana's sunflowers. As a result, seed production on Emiliana's farm increased from 300kg in 2019 to 620kg in 2020.

With reference to the information provided, explain the difference between private benefits and external benefits.

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14 Between 2012 and 2021 government spending on education per person per year in high-income countries increased from $7 507 to $8 515. In low-income countries the increase was from $42 to $56 per person.

Evaluate the microeconomic benefits of increased spending on education.

(Total for Question 14 = 20 marks)

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