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0460/43

May/June 2016

1 hour 30 minutes

Additional Materials: Ruler
Calculator
Protractor

Write your Centre number, candidate number and name in the spaces provided.
Write in dark blue or black pen.
You may use an HB pencil for any diagrams or graphs.
Do not use staples, paper clips, glue or correction fluid.
DO NOT WRITE IN ANY BARCODES.

Write your answer to each question in the space provided.
If additional space is required, you should use the lined pages at the end of this booklet. The question number(s) must be clearly shown.

Answer **all** questions.

The Insert contains Tables 1, 2 and 3 for Question 1, and Figs. 6, 8, 11 and Tables 5 and 6 for Question 2.

The Insert is **not** required by the Examiner.
Sketch maps and diagrams should be drawn whenever they serve to illustrate an answer.

At the end of the examination, fasten all your work securely together.
The number of marks is given in brackets [] at the end of each question or part question.

The syllabus is approved for use in England, Wales and Northern Ireland as a Cambridge International Level 1/Level 2 Certificate.

This document consists of **21** printed pages, **3** blank pages and **1** Insert.

- 1 Students in a class in Berlin, Germany, were learning about the sphere of influence of settlements and service centres.

- (a) (i) Which **one** of the following is the correct definition of 'sphere of influence'? Tick (✓) your choice in the table below.

Definition	Tick (✓)
area where people have migrated from	
area next to a particular service	
area served by a settlement or service	
area where people go to work in a town	
area around a town or shop	

[1]

- (ii) Why do bigger settlements usually have a larger sphere of influence?

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.....[3]

Some students decided to investigate the sphere of influence of two shopping areas, Spandau Arcaden and Pichelsdorfer Strasse, near where they lived.

They agreed to test the following hypotheses:

Hypothesis 1: *There will be more people in the area where more shops sell comparison goods.*

Hypothesis 2: *The area where more shops sell comparison goods has a larger sphere of influence in Berlin than the area where more shops sell convenience goods.*

- (b) To find out the number of people in the two shopping areas the students did pedestrian counts at three locations in each area.
- (i) Describe how the students could organise and carry out the pedestrian counts to get reliable results.

Organise the pedestrian counts

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Carry out the pedestrian counts

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.....[5]

- (ii) The results of the pedestrian counts are shown in Table 1 (Insert). Use these results to complete Fig. 1 below by plotting the number of pedestrians at location 3 in Spandau Arcaden and at location 2 in Pichelsdorfer Strasse. [2]

Results of pedestrian counts

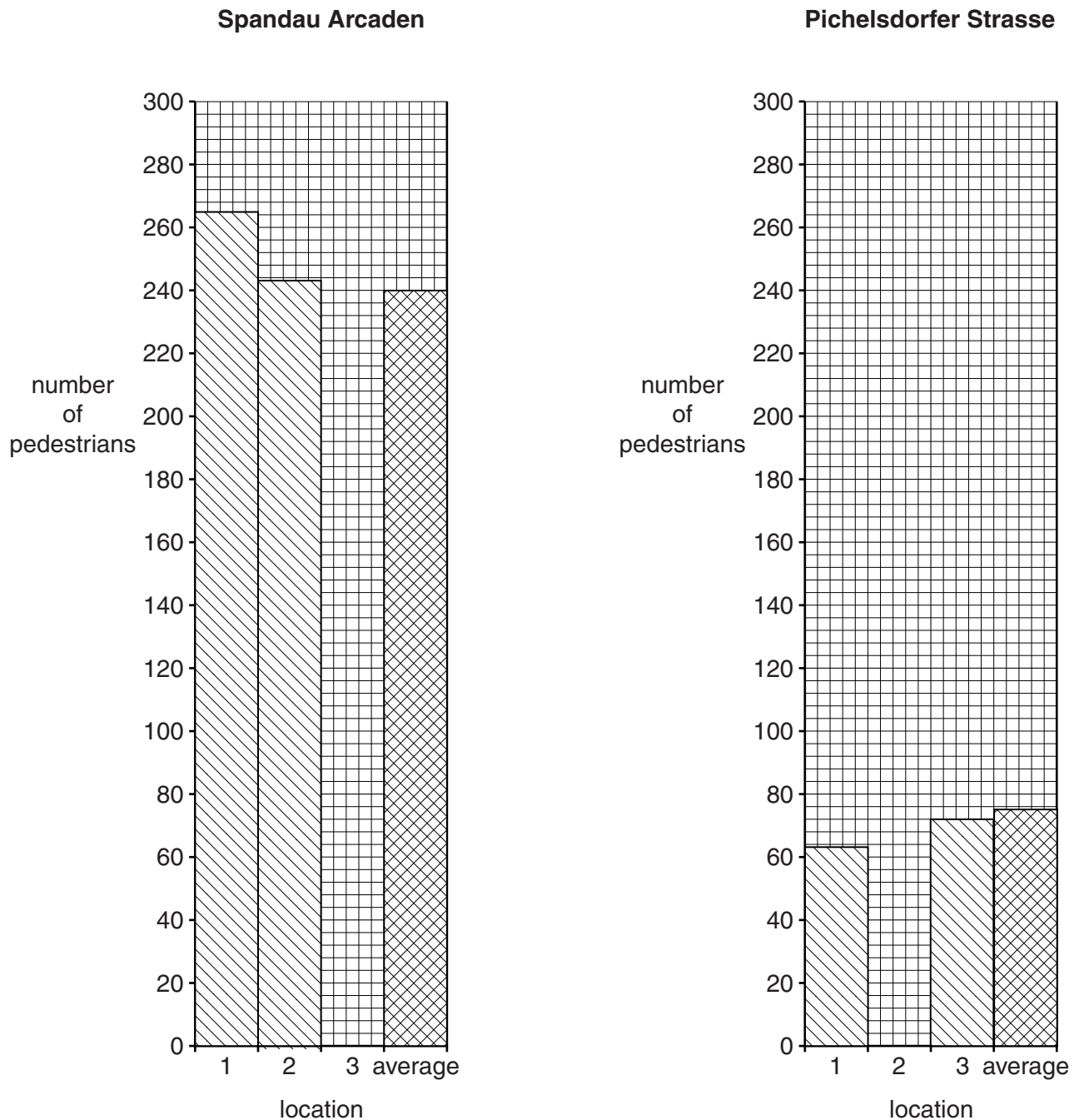


Fig. 1

- (c) To test both hypotheses the students also needed to put the shops into two groups to show whether they sold convenience (low order) goods or comparison (high order) goods.
- (i) Which **one** of the following statements about comparison and convenience goods is correct? Tick (✓) your choice.

	Tick (✓)
Comparison goods are imported and convenience goods are produced locally	
Comparison goods are more difficult to transport than convenience goods	
Comparison goods are better quality than convenience goods	
Comparison goods are usually more expensive than convenience goods	
Comparison goods are bought more frequently than convenience goods	

[1]

- (ii) In each shopping area the students grouped the shops into those selling either convenience goods or comparison goods. Their results are shown in Table 2 (Insert). Use these results to complete Fig. 2 below. [2]

Types of shops in the two shopping areas

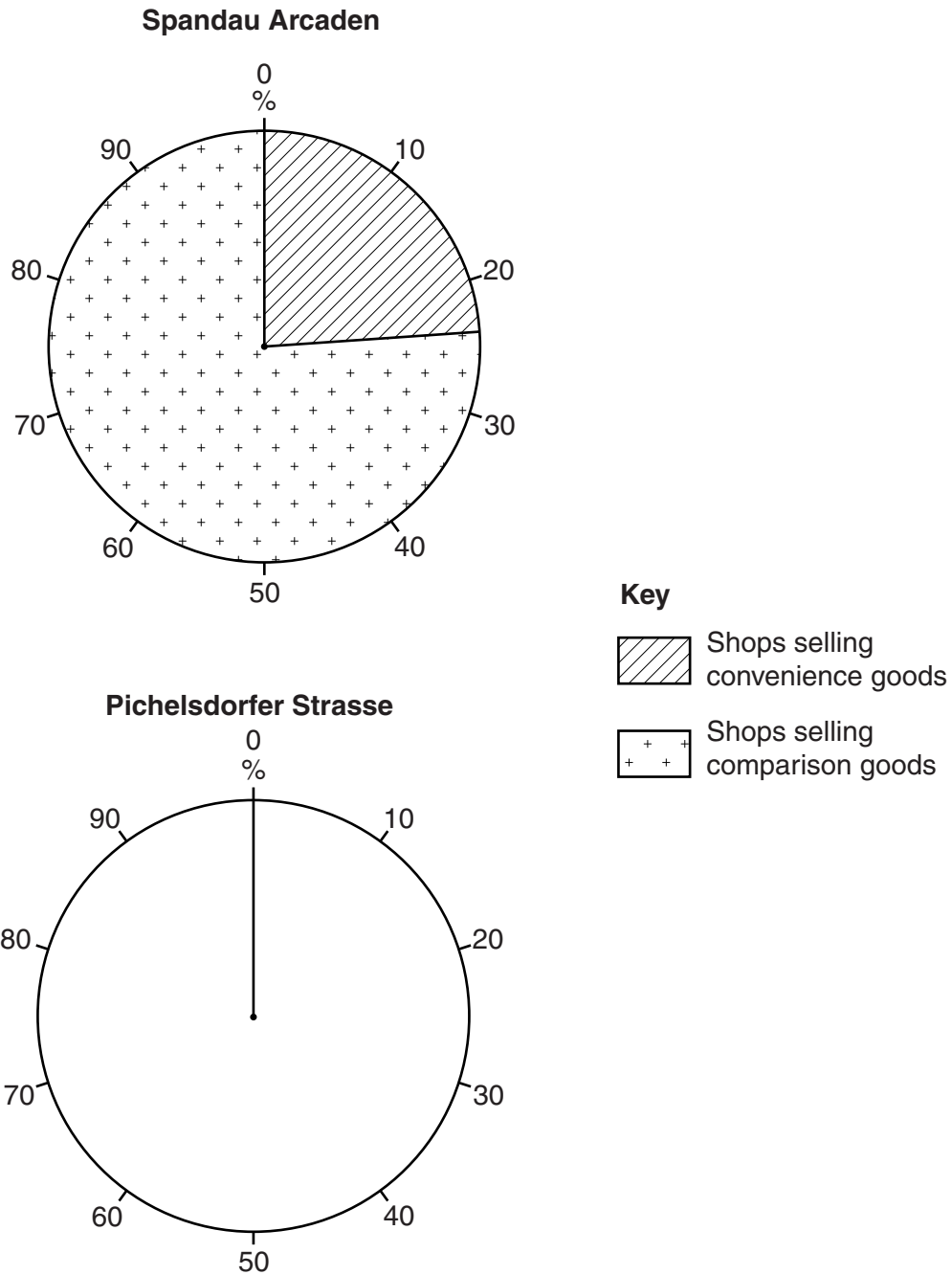


Fig. 2

- (iii) Do the results of the pedestrian count and the shop survey support **Hypothesis 1:** *There will be more people in the area where more shops sell comparison goods?* Use evidence from Figs. 1 and 2 and Tables 1 and 2 to support your answer.

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.....[3]

- (d) To investigate **Hypothesis 2:** *The area where more shops sell comparison goods (Spandau Arcaden) has a larger sphere of influence in Berlin than the area where more shops sell convenience goods (Pichelsdorfer Strasse)*, the students needed to find out where people who were shopping in the two areas came from.

- (i) One student wanted to ask people 'Where do you live?' Suggest **two** reasons why their teacher said that this question should not be asked.

1

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2

.....[2]

- (ii) The students agreed to ask people 'In which borough of Berlin do you live?' The answers to this question are shown in Table 3 (Insert). They displayed the results for the two shopping areas in choropleth maps. These are shown in Fig. 3 below and Fig. 4 on page 9.

Where people shopping at Spandau Arcaden came from

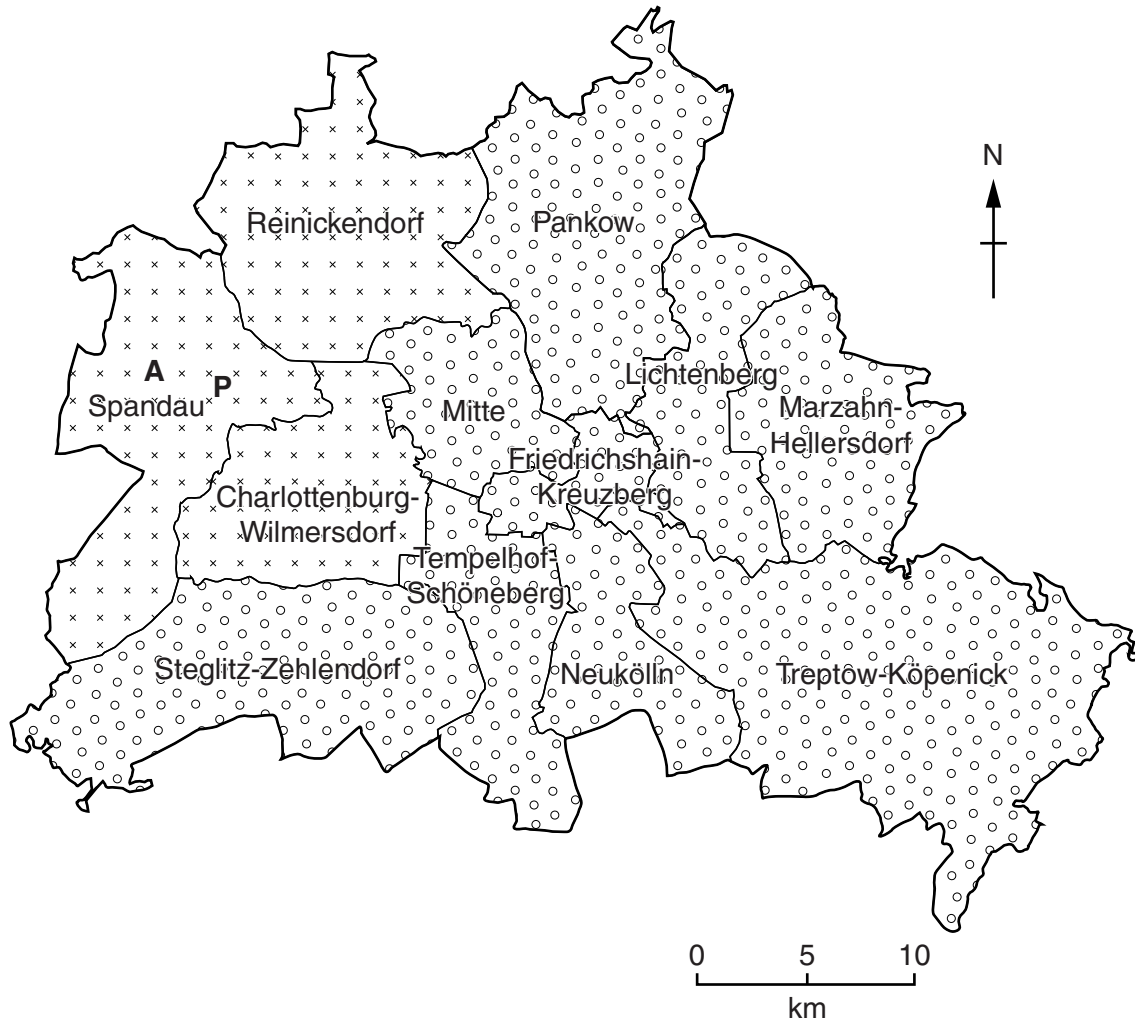
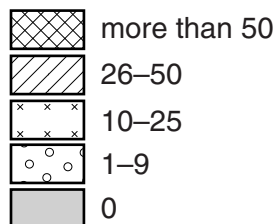


Fig. 3

Key (for Figs. 3 and 4)

% of people interviewed



A Spandau Arcaden

P Pichelsdorfer Strasse

Where people shopping at Pichelsdorfer Strasse came from

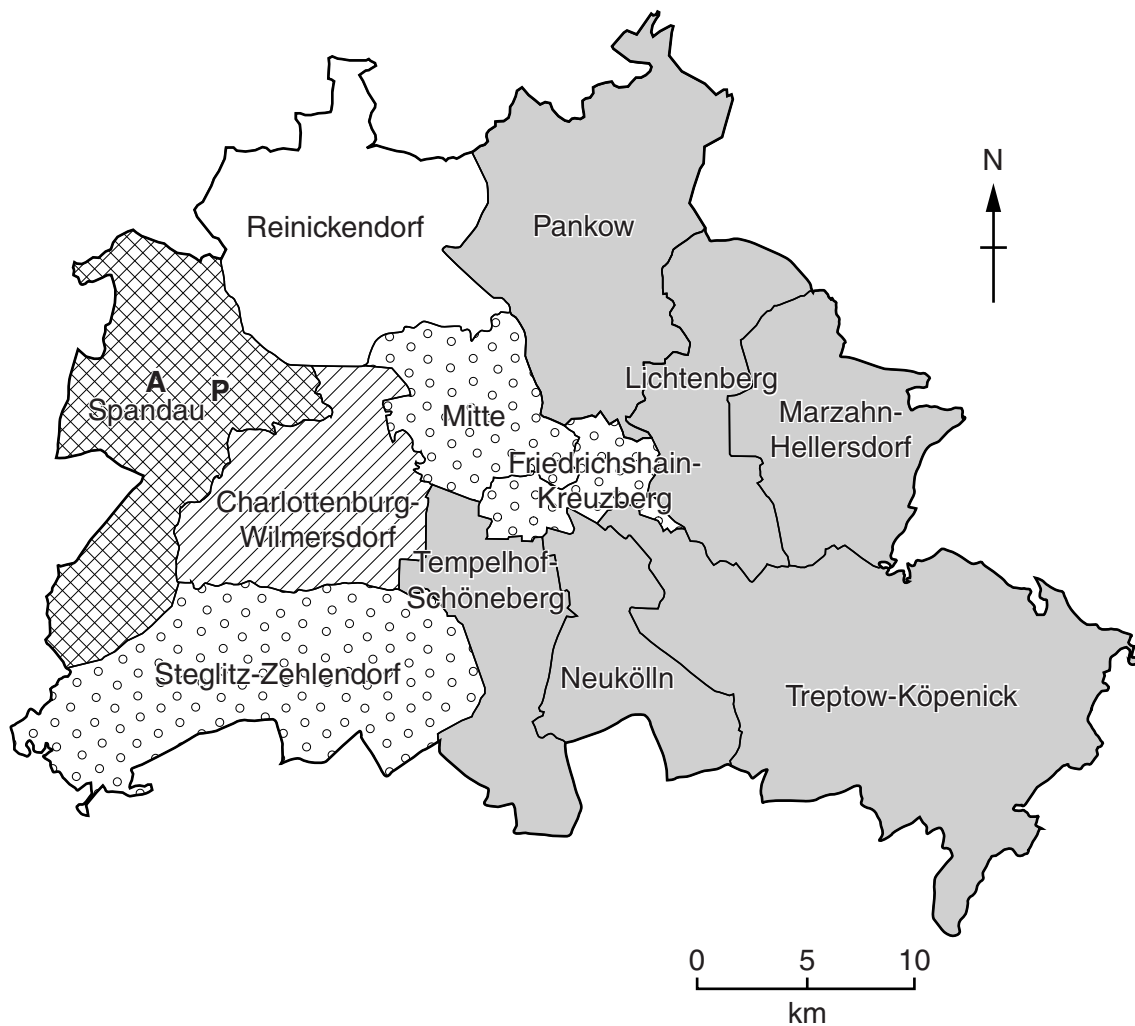


Fig. 4

Complete Fig. 4 by shading the percentage of people who were shopping at Pichelsdorfer Strasse which came from Reinickendorf. [1]

- (iii) Give **one** advantage and **one** disadvantage of a choropleth map for displaying the data.

Advantage

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.....

Disadvantage

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.....[2]

- (iv) What conclusion did the students make about **Hypothesis 2**: *The area where more shops sell comparison goods (Spandau Arcaden) has a larger sphere of influence in Berlin than the area where more shops sell convenience goods (Pichelsdorfer Strasse)?* Explain the conclusion and support your answer with data from Table 3 and Figs. 3 and 4.

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.....[4]

- (e) The students returned to the two shopping areas to map land use. Fig. 5, opposite, shows their sketch map of part of Spandau Arcaden.

- (i) Complete the key to Fig. 5 by writing in the following types of land use.

- entertainment or leisure
- shop selling comparison goods
- shop selling convenience goods

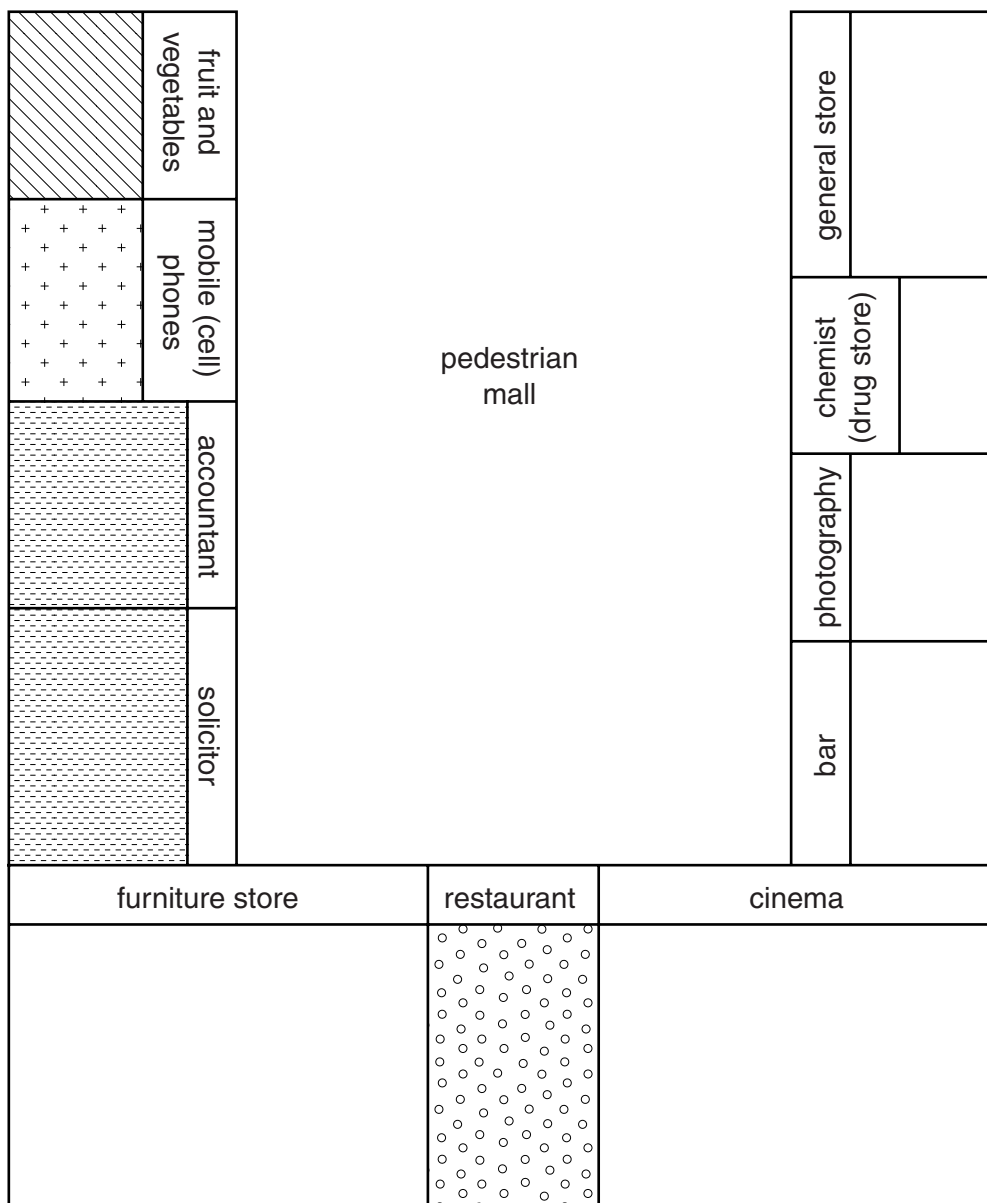
[1]

- (ii) Use the completed key to shade in the rest of the buildings on Fig. 5.

[3]

[Total: 30 marks]

Sketch map of part of Spandau Arcaden



Key

Land use type

office	

Fig. 5

- 2 Students who live in North East England visited the local coast to do two pieces of fieldwork. This coastal area is shown in Fig. 6 (Insert). They wanted to investigate the impact of groynes on longshore drift and to find out what local people thought about the different types of coastal defences in the area.

A groyne is a structure, usually made of wood or concrete, built out into the sea.

The students decided to investigate the following hypotheses:

Hypothesis 1: *Groynes reduce the movement of material along a beach.*

Hypothesis 2: *Local people are in favour of the coastal defences used in the area.*

- (a) (i) The students knew that longshore drift is usually related to the wind direction.

Describe how the students could work out the wind direction at the beach.

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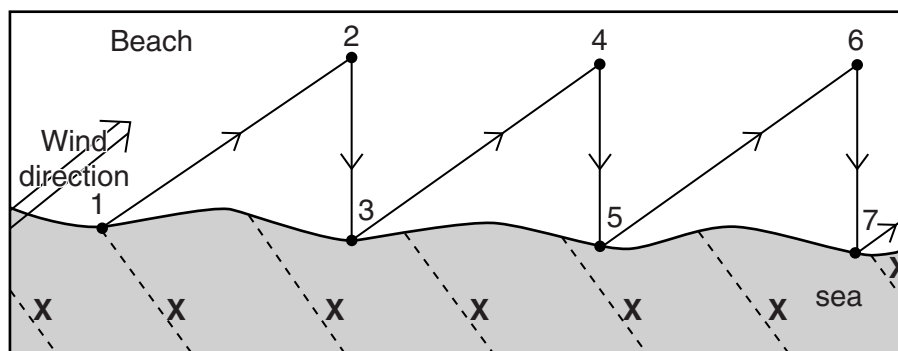
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.....[2]

- (ii) Longshore drift moves pebbles and sand along the coast. This is shown in Fig. 7 below.

Longshore drift



Key



movement
of pebble

- 1–7 positions of pebble

Fig. 7

Which **one** of the following do the lines labelled **X** on Fig. 7 show?
Tick your answer.

[1]

	Tick (✓)
depth of the sea	
direction of the tide	
waves approaching the beach	

- (iii)** Explain how longshore drift moves material along the coast.

[4]

TURN PAGE FOR QUESTION 2(b)

- (b) To test **Hypothesis 1** the students made some measurements at three groynes on the beach.
- (i) They measured the height of the top of each groyne above the beach. This technique is shown in Fig. 8 (Insert).

The results are shown in Table 4 below.

Table 4

Measurements from top of groyne to beach

Groyne	Height of groyne above beach (m)	
	South side	North side
A	0.45	1.03
B	0.64	1.15
C	0.48	0.88

Use these results to complete Fig. 9 opposite by plotting the height of groyne C above the beach on the north side. [1]

- (ii) Suggest **two** ways that the students could have improved the reliability of their measurements.

1

.....

2

.....[2]

- (iii) What conclusion would the students make to **Hypothesis 1**: *Groynes reduce the movement of material along a beach*? Support your answer with evidence from Fig. 9.

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.....[3]

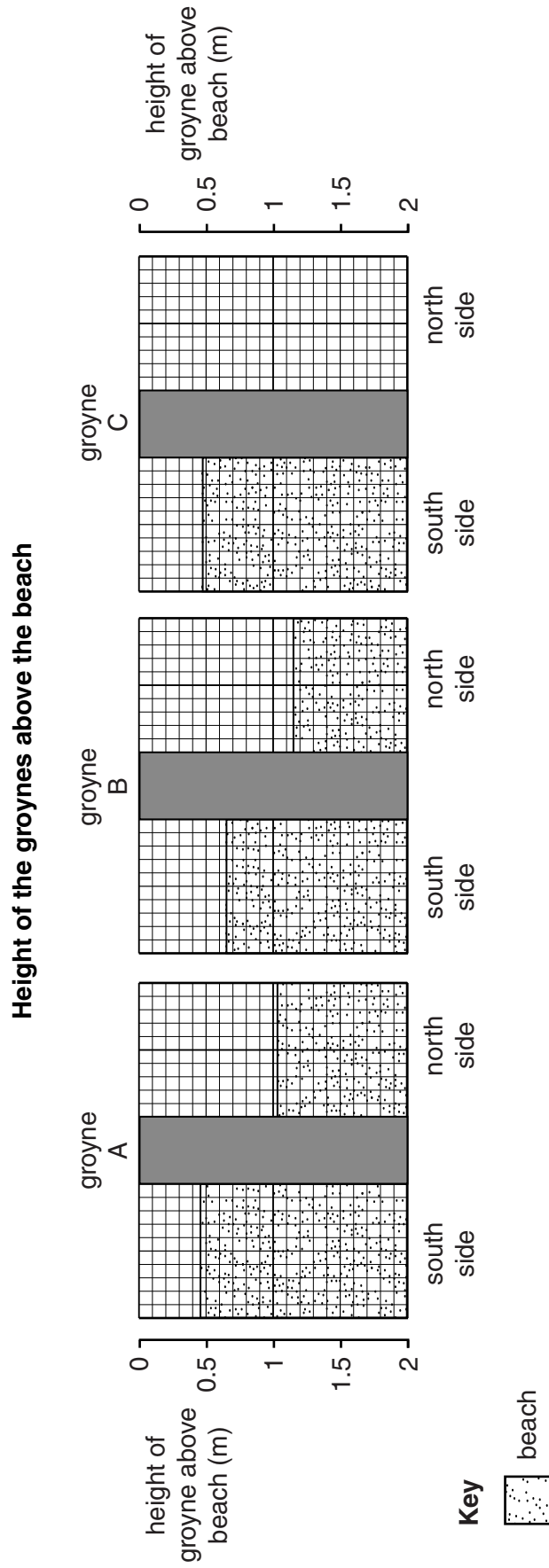


Fig. 9

- (c) Along the coast of North East England the land use and coastal defences vary. Fig. 10, below, shows the different land uses and coastal defences at five locations visited by the students. These locations are shown in Fig. 6 (Insert).

Land use and coastal defences

Location	Land use	Features of the coastline/ coastal defences
Newbiggin	Popular holiday resort	Rip raps, offshore bar, curved sea wall, revetments, beach replenishment
Sandy Bay	Caravan site on top of cliffs	Boulders fallen from the cliff
South Beach	Popular tourist beach and shops	Groynes, sea wall (promenade)
Hartley Links	Cattle farming on top of cliffs	Wide beach and sand dunes with marram grass
Collywell Bay	Residential area and main road	High sea wall

Fig. 10

- (i) Identify **two** locations where no coastal defences have been built.
 and [1]
- (ii) Identify **two** locations where defences have been built to protect the coast.
 and [1]
- (iii) Suggest why some of these coastal areas have more defences than others.

 [4]

(d) To investigate **Hypothesis 2**: *Local people are in favour of the coastal defences used in the area*, the students did a questionnaire survey at the five locations on the coast which are shown in Fig. 6 (Insert). The questionnaire is shown in Fig. 11 (Insert).

- (i) Why did the students ask Question 1, 'Do you know that there are sea defences along the coast?'

.....
[1]

- (ii) Suggest **two** pieces of information usually included in a questionnaire which the students have missed out.

1

 2
[2]

- (e) The answers to Question 2 about the opinions that the people surveyed had about the coastal defences are shown in Table 5 (Insert).

- (i) Complete the results for the opinion 'The coastal defences are unsightly' in Fig. 12 below. [3]

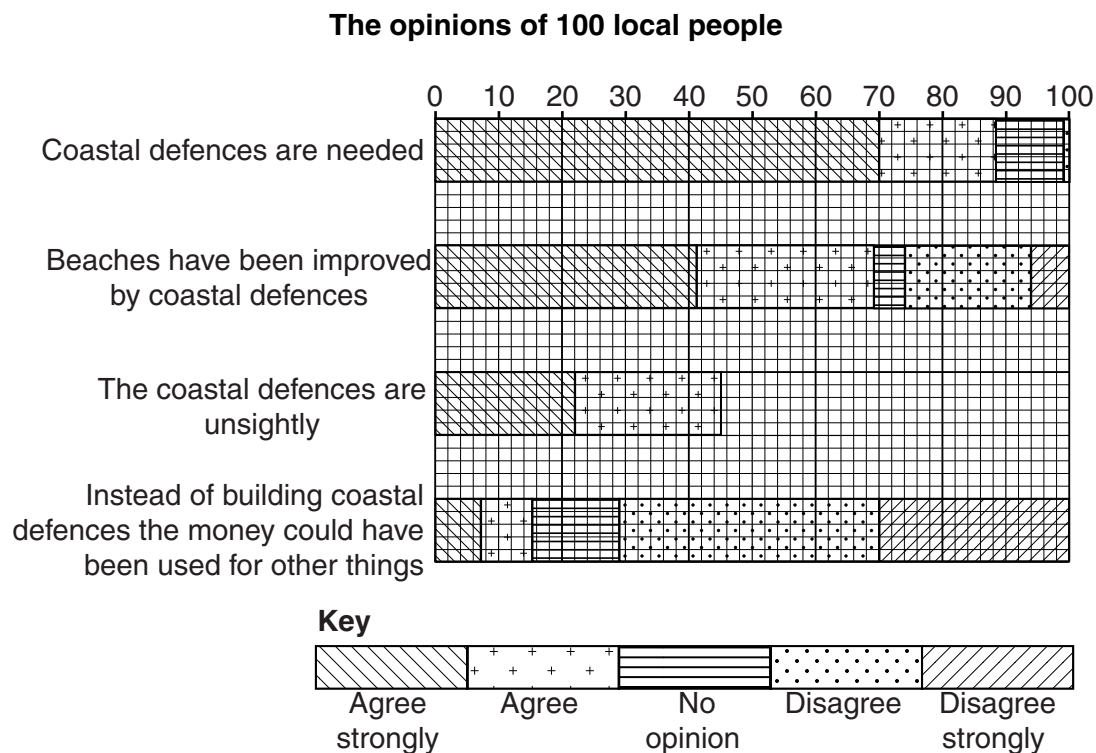


Fig. 12

- (ii) The students made the conclusion that **Hypothesis 2: Local people are in favour of the coastal defences used in the area** was generally true.

Support their conclusion with evidence from Fig. 12 and Table 5 (Insert).

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.....[3]

- (iii) The results of Questions 3 and 4 are shown in Table 6 (Insert). Why might the answers to Question 4 conflict with the opinions given by local people in Question 3?

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.....[2]

[Total: 30 marks]

[illegible]

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