Cambridge Assessment International Education

Cambridge IGCSE™

CANDIDATE NAME									
CENTRE NUMBER						CANDIDATE NUMBER				

3601210359

GEOGRAPHY **0460/42**

Paper 4 Alternative to Coursework **February/March 2024**

1 hour 30 minutes

You must answer on the question paper.

You will need: Insert (enclosed) Ruler
Calculator
Protractor

INSTRUCTIONS

- Answer **all** questions.
- Use a black or dark blue pen. You may use an HB pencil for any diagrams or graphs.
- Write your name, centre number and candidate number in the boxes at the top of the page.
- Write your answer to each question in the space provided.
- Do **not** use an erasable pen or correction fluid.
- Do **not** write on any bar codes.
- If additional space is needed, you should use the lined pages at the end of this booklet; the question number or numbers must be clearly shown.

INFORMATION

- The total mark for this paper is 60.
- The number of marks for each question or part question is shown in brackets [ ].
- The insert contains additional resources referred to in the questions.

Definitions
MEDCs – More Economically Developed Countries
LEDCs – Less Economically Developed Countries

This document has **20** pages. Any blank pages are indicated.

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1 Students did fieldwork on a local coastline. They investigated a variety of topics including longshore drift and coastal management.

The students agreed to test the following hypotheses:

Hypothesis 1: *Longshore drift is occurring along the local coastline.*

Hypothesis 2: *Coastal defences have a positive impact on the local coastline.*

(a) The students had learnt that longshore drift moves beach material along the coast. This is shown in Fig. 1.1 (Insert).

Which **three** of the following statements about longshore drift are correct? Tick (✓) your answers.

statement	tick (✓)
Longshore drift occurs in deep water.	
Swash moves material down the beach.	
Movement of material up and down the beach is repeated with each wave.	
Waves approach the coastline at an angle.	
Backwash moves material up the beach.	
The direction of longshore drift depends on the direction of the tide.	
The prevailing wind influences the direction of longshore drift movement.	

[3]

(b) To investigate **Hypothesis 1:** *Longshore drift is occurring along the local coastline*, some students used the fieldwork method described in Fig. 1.2 (Insert).

(i) Suggest why the students

painted the pebbles

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repeated their method three times.

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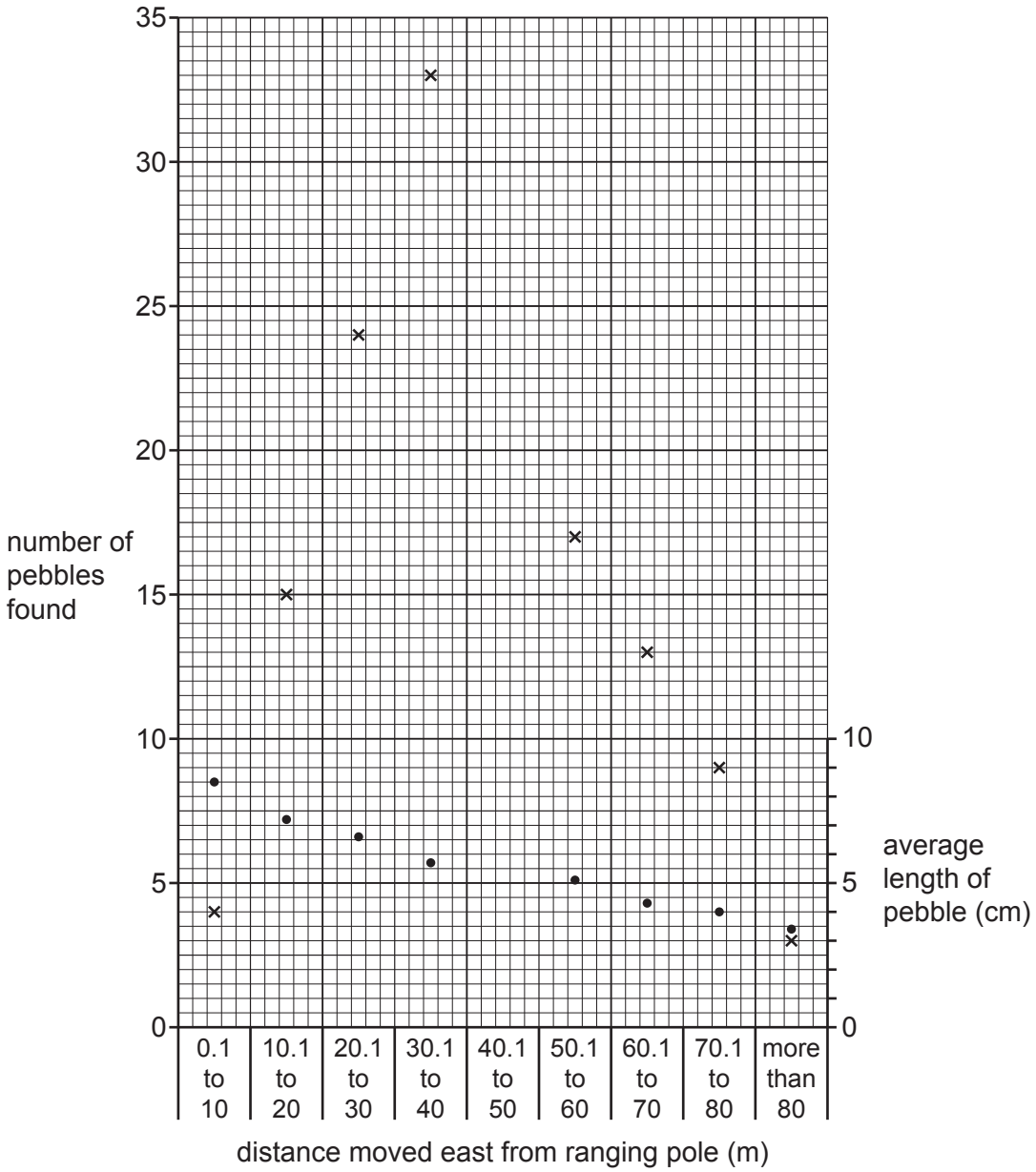
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[2]

(ii) The results of the students' measurements are shown in Table 1.1 (Insert).

Plot the results of the total number of pebbles found and the average length of pebble that moved between 40.1 m and 50 m from the ranging pole on Fig. 1.3. [2]

Results of the students' measurements



Key

× total number of pebbles found in the three tests

• average length of long axis of pebbles (cm)

Fig. 1.3

(iii) Do the results shown in Fig. 1.3 and Table 1.1 support **Hypothesis 1:** *Longshore drift is occurring along the local coastline*? Use data to support your conclusion.

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..... [4]

(c) Other students used a different method to investigate longshore drift. Their method is described in Fig. 1.4 (Insert).

Suggest **two** reasons why this method might produce unreliable results.

1 .....

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2 .....

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[2]

(d) In an area further along the coast the students saw some groynes such as the ones shown in Fig. 1.5 (Insert).

Describe the groynes and explain how they can reduce the effect of longshore drift.

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..... [3]

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(e) To investigate **Hypothesis 2:** *Coastal defences have a positive impact on the local coastline*, the students did a bi-polar survey of four types of defences built along the coastline. Groynes are shown in Fig. 1.5 (Insert), gabions are shown in Fig. 1.6 (Insert), revetments are shown in Fig. 1.7 (Insert) and a sea wall is shown in Fig. 1.8 (Insert).

(i) The students filled in a bi-polar survey recording form as they looked at each type of defence. This is shown in Fig. 1.9 (Insert).

Suggest **three** ways of collecting the information for each type of defence that would help make the results of the students' bi-polar survey more reliable.

1 .....

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2 .....

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3 .....

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[3]

(ii) The results of the bi-polar survey are shown in Table 1.2 (Insert). Figs. 1.10 to 1.13 show graphs of the results of the students' bi-polar survey.

Use these results to **plot the score for 'attractiveness' and insert the total score for gabions** on Fig. 1.10. [2]

Results of the students' bi-polar survey

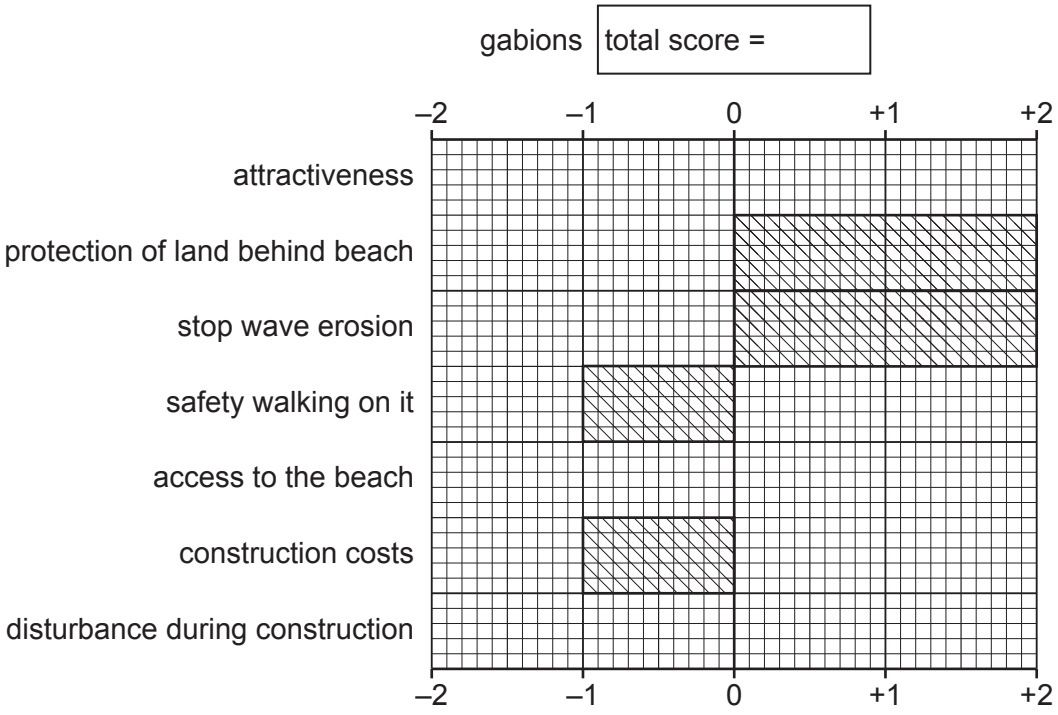


Fig. 1.10

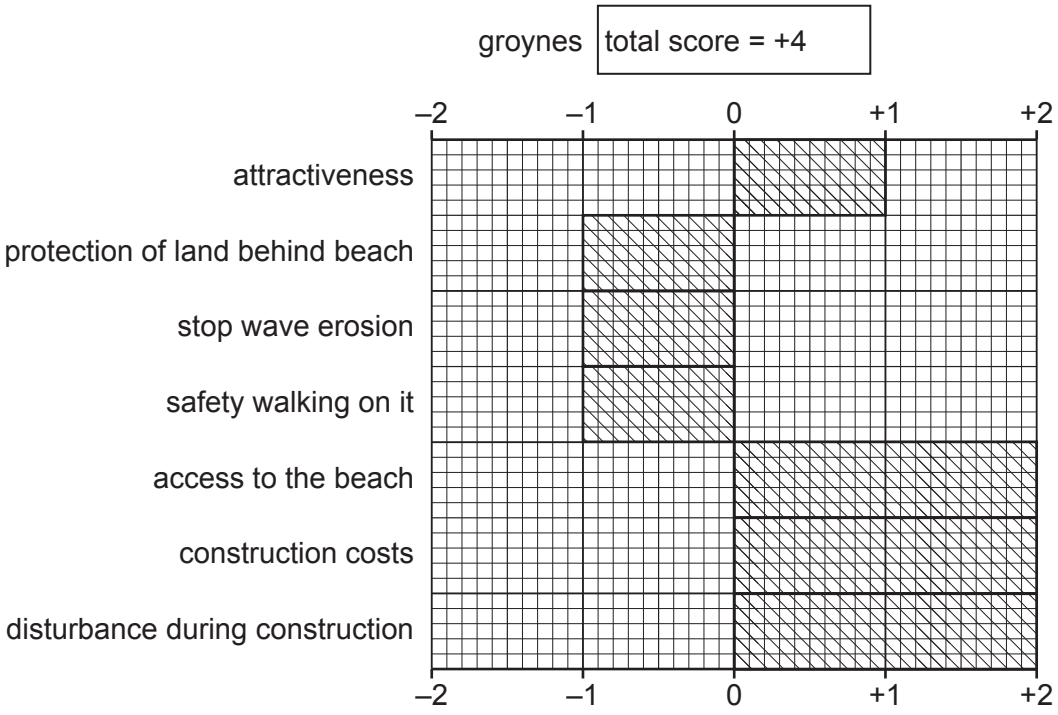


Fig. 1.11

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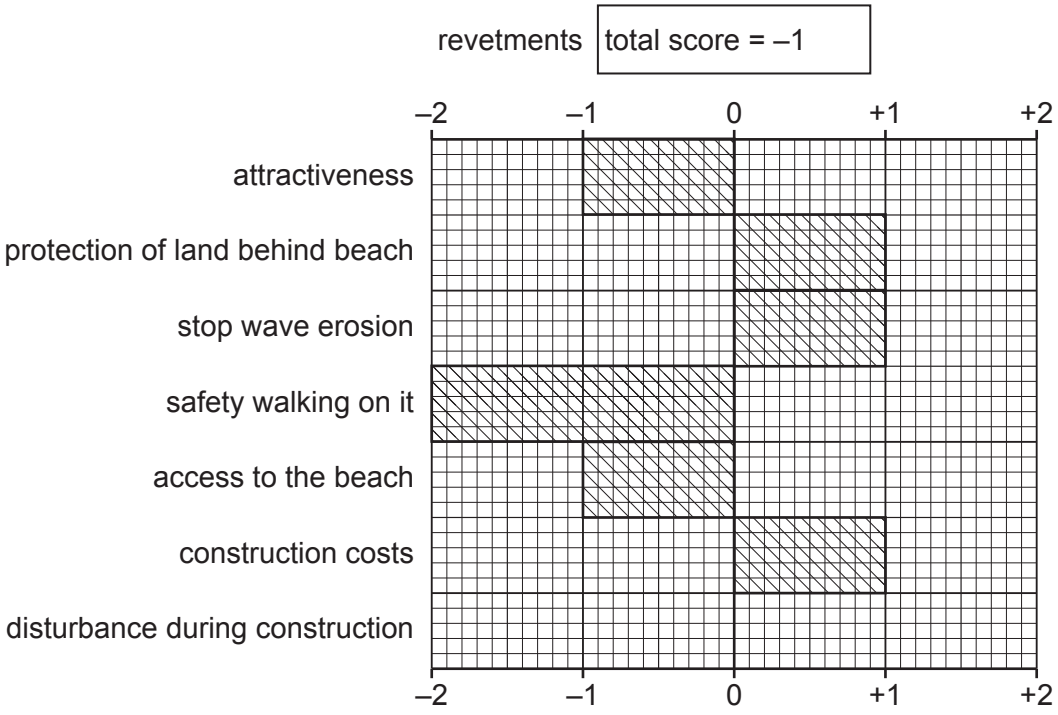


Fig. 1.12

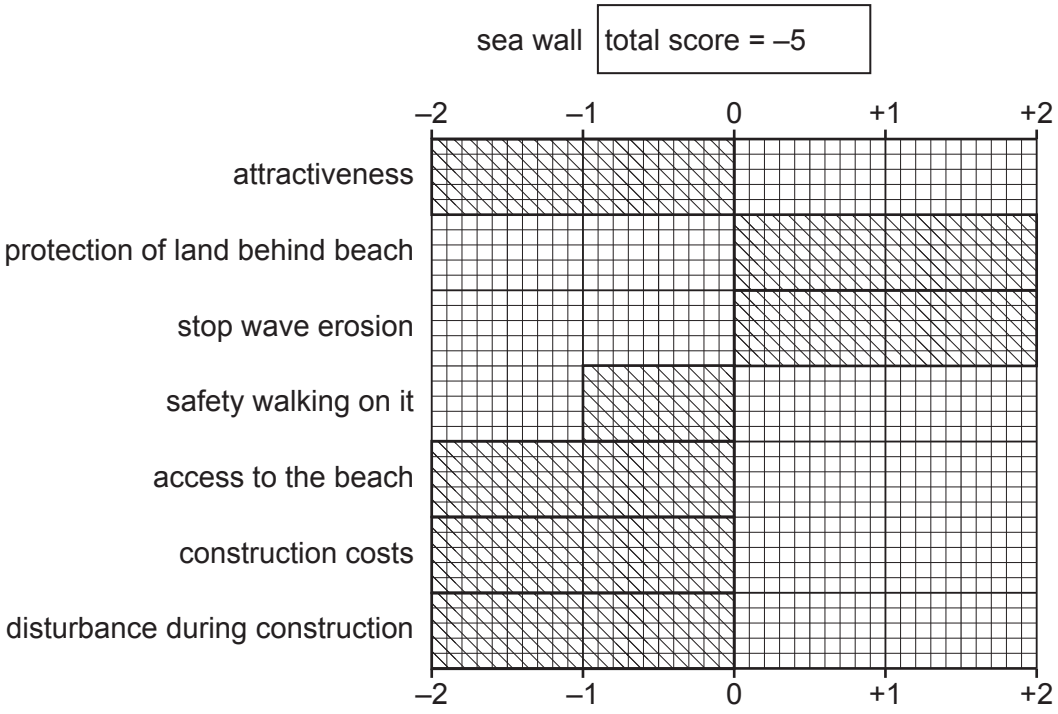


Fig. 1.13

(iii) Do the results of the fieldwork support **Hypothesis 2:** *Coastal defences have a positive impact on the local coastline*? Tick (✓) your conclusion. Support your conclusion with total scores from Figs. 1.10, 1.11, 1.12 and 1.13.

	tick (✓)
The conclusion is true for all defences.	
The conclusion is true for some defences.	
The conclusion is false for all defences.	

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..... [4]

(f) As an extension task the students counted the number of each different method used to protect the natural environment of the area from visitors. Their results are shown in Table 1.3 (Insert).

(i) Use the results to **plot the number of litter bins** on Fig. 1.14. [1]

Methods used to protect the natural environment

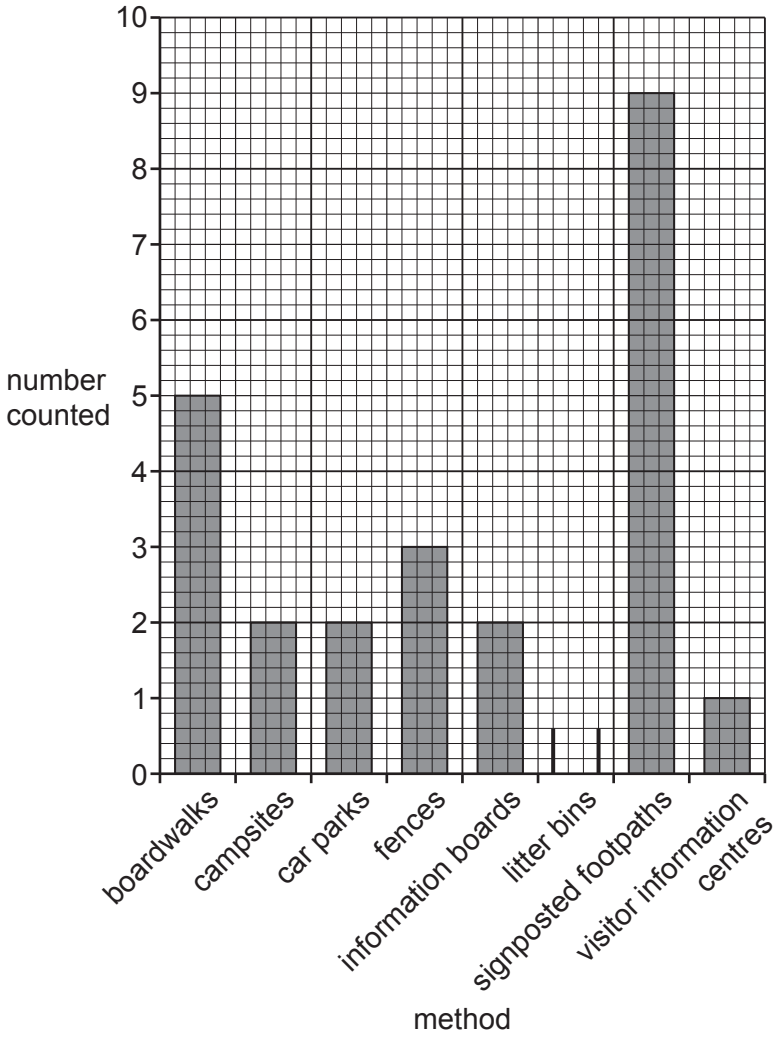


Fig. 1.14

(ii) Describe **different** ways each of the following can be used to protect the natural environment from visitors.

litter bins

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car parks

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signposted footpaths

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visitor information centres

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[4]

[Total: 30]

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2 Students in Scotland, UK, (an MEDC in Europe) visited a local manufacturing industry. The factory is located near to the centre of a large urban area. Two groups of workers are employed in the factory: one group develops new products and the other group makes the products from imported components.

The students did some fieldwork to investigate where the workers lived and to find out what were the main advantages and disadvantages of living there. One student used the results of their fieldwork to investigate the following hypotheses:

Hypothesis 1: *The two groups of workers live in different parts of the urban area.*

Hypothesis 2: *Workers think that travelling to and from work is the main disadvantage of where they live.*

(a) (i) To collect data to test these hypotheses the students produced a questionnaire. This is shown in Fig. 2.1 (Insert).

Name and describe a suitable method of selecting workers to complete the questionnaire to get a representative sample.

Name of sampling method .....

Description

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..... [3]

(ii) Part of the recording sheet which the students used is shown in Fig. 2.2 (Insert). Describe this method of recording results.

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..... [2]

(b) The results for question 1 in the questionnaire (*In which part of the urban area do you live?*) are shown in Table 2.1 (Insert).

(i) A student used these results to draw the maps shown in Figs. 2.3 and 2.4.

Use Table 2.1 to **complete Fig. 2.3** to show the number of workers who develop new products living in Almond and Forth. [2]

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Where workers who develop new products live

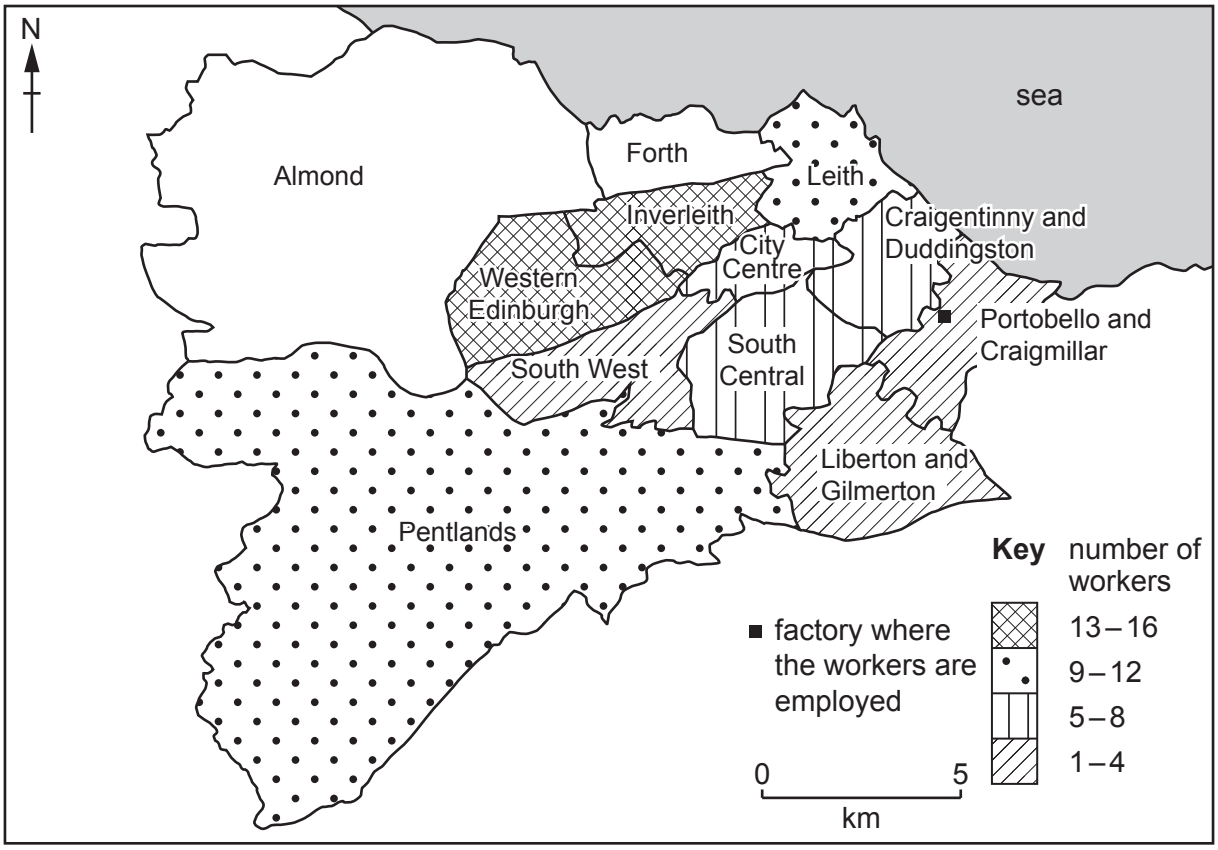


Fig. 2.3

Where workers who make the products live

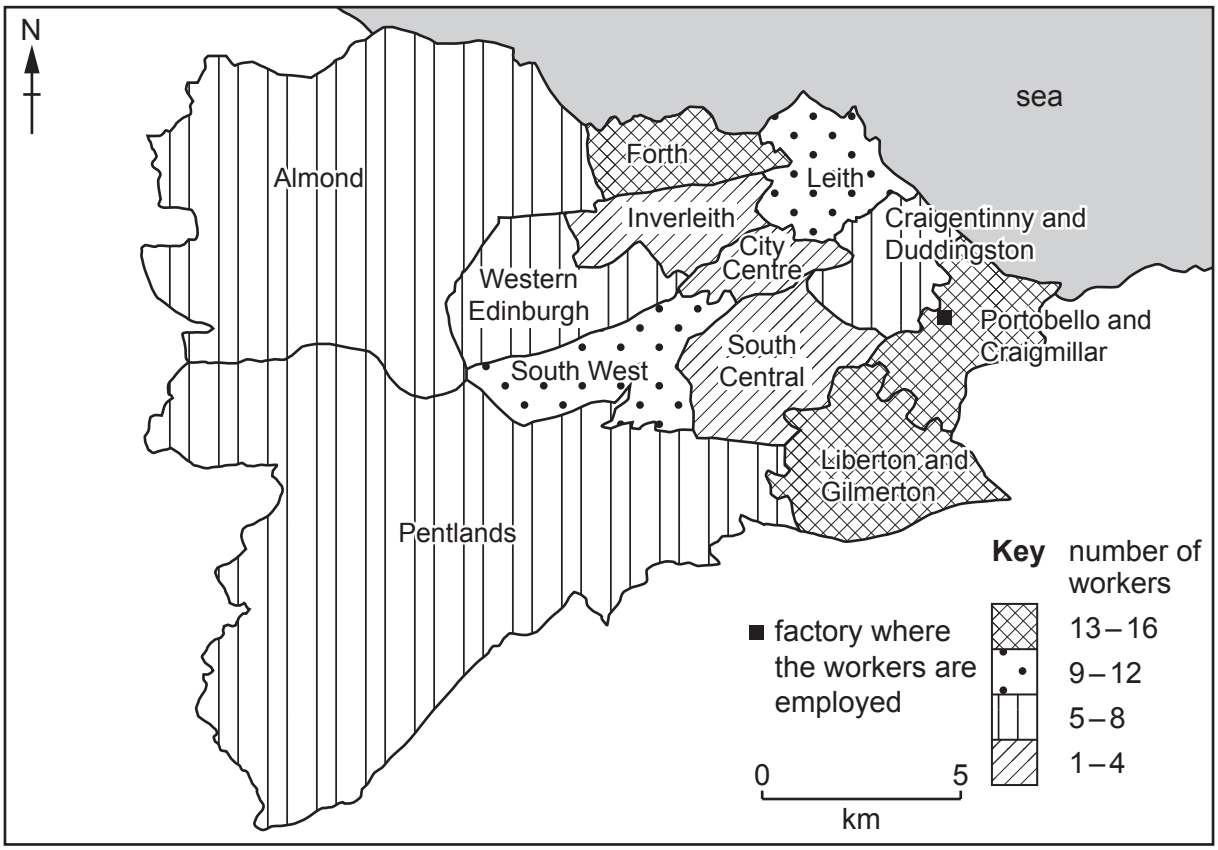


Fig. 2.4

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[Turn over

(ii) Name the type of map shown in Figs. 2.3 and 2.4. Choose from the following list. Tick (✓) your choice. [1]

	tick (✓)
choropleth map	
flow line map	
isoline map	
relief map	

(iii) Give **two** advantages of using this type of map to present data.

advantage 1

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advantage 2

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[2]

(iv) What conclusion did the student make about **Hypothesis 1:** *The two groups of workers live in different parts of the urban area*?

Support your decision with data from Figs. 2.3 and 2.4 and Table 2.1.

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(c) Table 2.2 (Insert) shows the results of Question 2 in the questionnaire, (*What is the main advantage of living in your area?*).

(i) Use the results from Table 2.2 to **complete the graph for workers who make the products** in Fig. 2.5. [2]

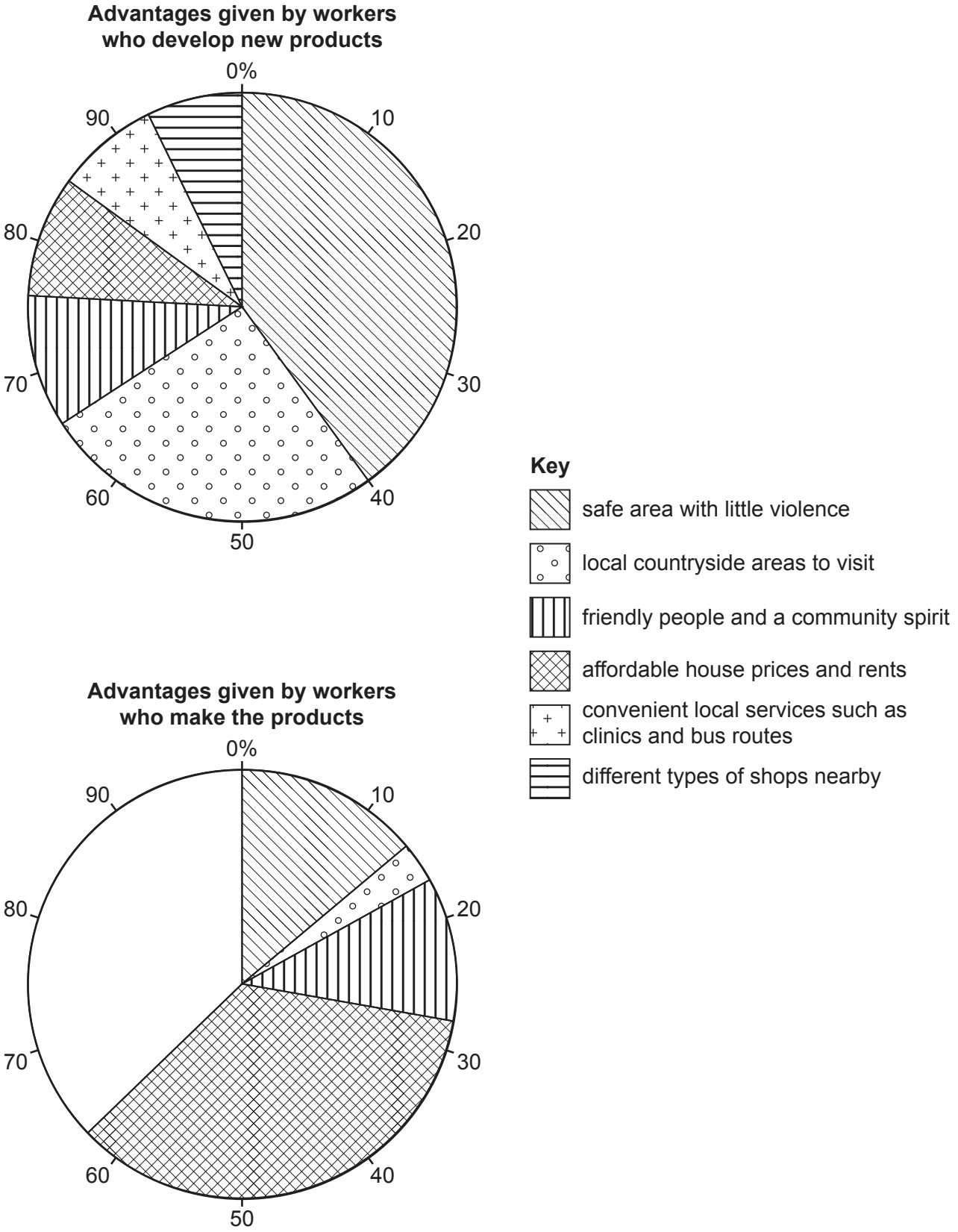


Fig. 2.5

(ii) From Table 2.2 identify the **two** advantages which have the greatest difference between the two groups of workers.

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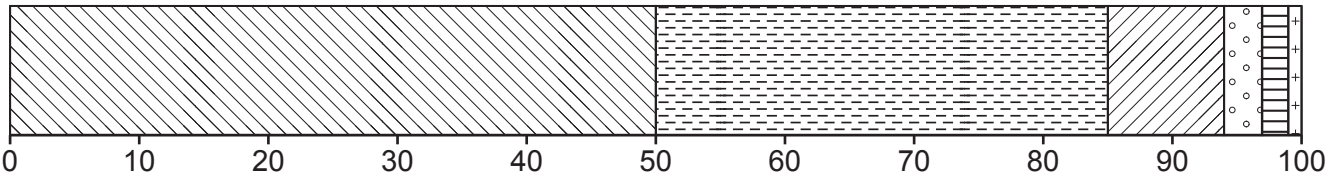
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(d) Table 2.3 (Insert) shows the results of Question 3 in the questionnaire, (*What is the main disadvantage of living in your area?*).

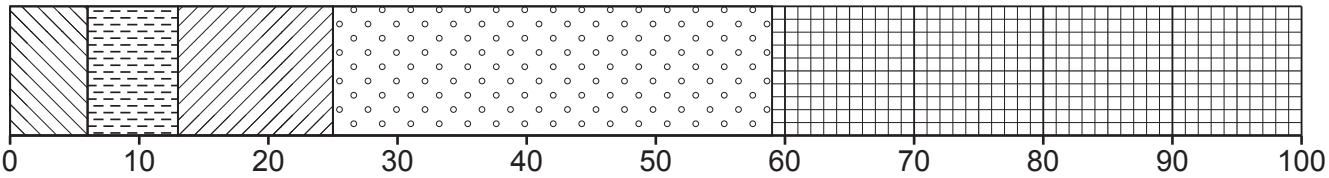
(i) Use the results from Table 2.3 to **complete the graph for workers who make the products** in Fig. 2.6. [2]

Disadvantages given by workers

workers who develop new products



workers who make the products



Key

- congested roads on the journeys to and from work
- overcrowded trains on the journeys to and from work
- noise from traffic and aircraft
- social disorder e.g. gangs, graffiti, vandalism
- no open spaces for recreation
- poor schools

Fig. 2.6

(ii) Which **one** of the conclusions would the students make about **Hypothesis 2:** *Workers think that travelling to and from work is the main disadvantage of where they live*? Tick (✓) your choice and support your conclusion with evidence from Fig. 2.6 and Table 2.3.

	tick (✓)
The hypothesis is true for both groups of workers.	
The hypothesis is true for one group of workers.	
The hypothesis is true for neither group of workers.	

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(e) Traffic congestion may affect a person's journey to work.

(i) Suggest **two** other effects of traffic congestion.

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[2]

(ii) Explain why there is traffic congestion in urban areas.

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[Total: 30]

Additional pages

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