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Cambridge Assessment International Education

Cambridge IGCSE™

CANDIDATE NAME									
CENTRE NUMBER						CANDIDATE NUMBER				

4643696466

GEOGRAPHY **0460/43**

Paper 4 Alternative to Coursework **October/November 2022**

1 hour 30 minutes

You must answer on the question paper.

You will need: Insert (enclosed) Ruler
Calculator

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.

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

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1 Students in Rohtak, India, did fieldwork to compare two retail (shopping) areas in the city. The shopping areas are a traditional shopping street in the city centre and a new indoor shopping mall located on a main highway, 4 km from the city centre. The two retail areas are shown in Fig. 1.1 (Insert).

Some students decided to test the following hypotheses:

Hypothesis 1: *People travel further to shop in the city centre than the indoor shopping mall.*

Hypothesis 2: *More people visit the city centre shopping area than the indoor shopping mall.*

(a) To test these hypotheses the students used a questionnaire with people in the two shopping areas. The questionnaire is shown in Fig. 1.2 (Insert).

The group of students in the city centre used a random sampling method to select people to give the questionnaire to. The group of students at the shopping mall used a systematic sampling method to select people.

Describe how these two sampling methods are different.

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(b) The results of question 1 in the questionnaire are shown in Table 1.1 (Insert).

(i) The students used their results of question 1 (*How far have you travelled to the shopping centre today?*) to draw the histograms shown in Fig. 1.3. Use the results in Table 1.1 to **complete the graph** for the indoor shopping mall. [2]

Distance people travel to the shopping areas

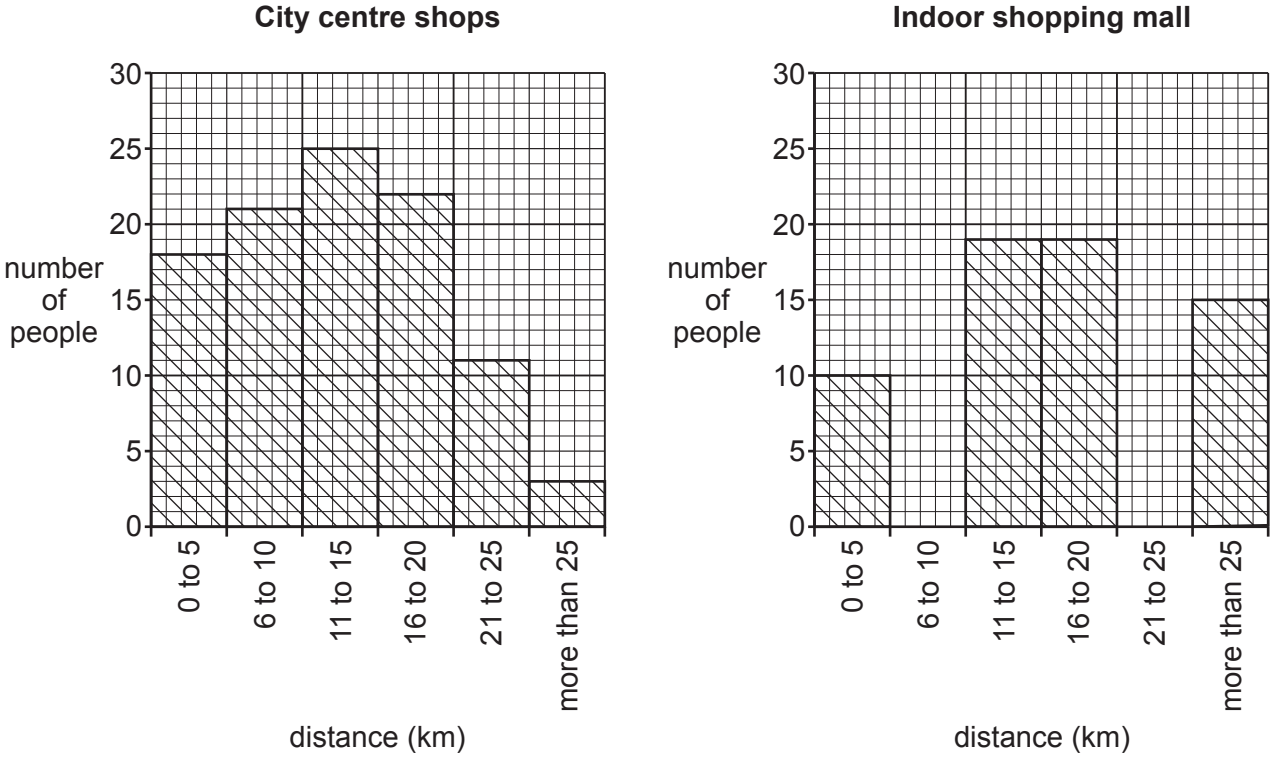

Fig. 1.3

(ii) What is the most common distance travelled to the city centre shops? **Put your answer into the table below.** [1]

shopping centre	most common distance travelled (km)
city centre shops	
indoor shopping mall	21 to 25

(iii) Do the results of question 1 support **Hypothesis 1:** *People travel further to shop in the city centre than the indoor shopping mall*? Support your answer with data from Fig. 1.3 and Table 1.1.

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(c) One student used the answers to question 2 in the questionnaire (*How often do you come to the shopping centre?*) to make the results table shown in Table 1.2 (Insert).

(i) Use the results in Table 1.2 to **complete the divided bar graph** for the city centre shops in Fig. 1.4. [2]

How often people visit the shopping areas

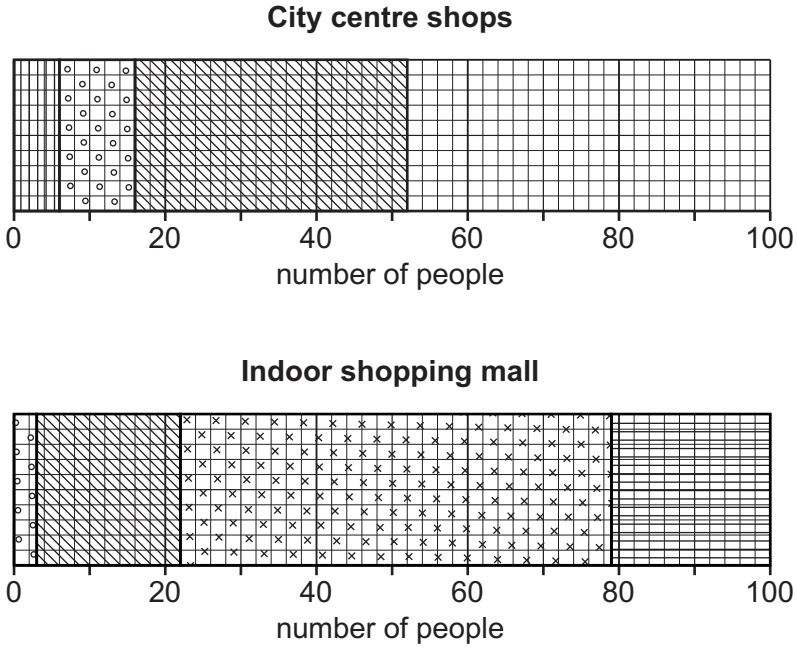

Fig. 1.4

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(ii) Describe the differences between the frequency of visits to the two shopping areas. Include statistics in your answer.

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(d) To investigate **Hypothesis 2:** *More people visit the city centre shopping area than the indoor shopping mall*, the students did a pedestrian count in both shopping areas.

(i) Fig. 1.5 (Insert) is an extract from one student's fieldwork diary. Using evidence from Fig. 1.5 **only**, suggest why the results might be unreliable.

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(ii) Describe the correct way that the students should do a pedestrian count to get reliable results.

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[Turn over

(iii) The students' results from a reliable pedestrian count are shown in Table 1.3 (Insert). Use the results to **draw the bar** for 16:00 hours at the city centre in Fig. 1.6. [1]

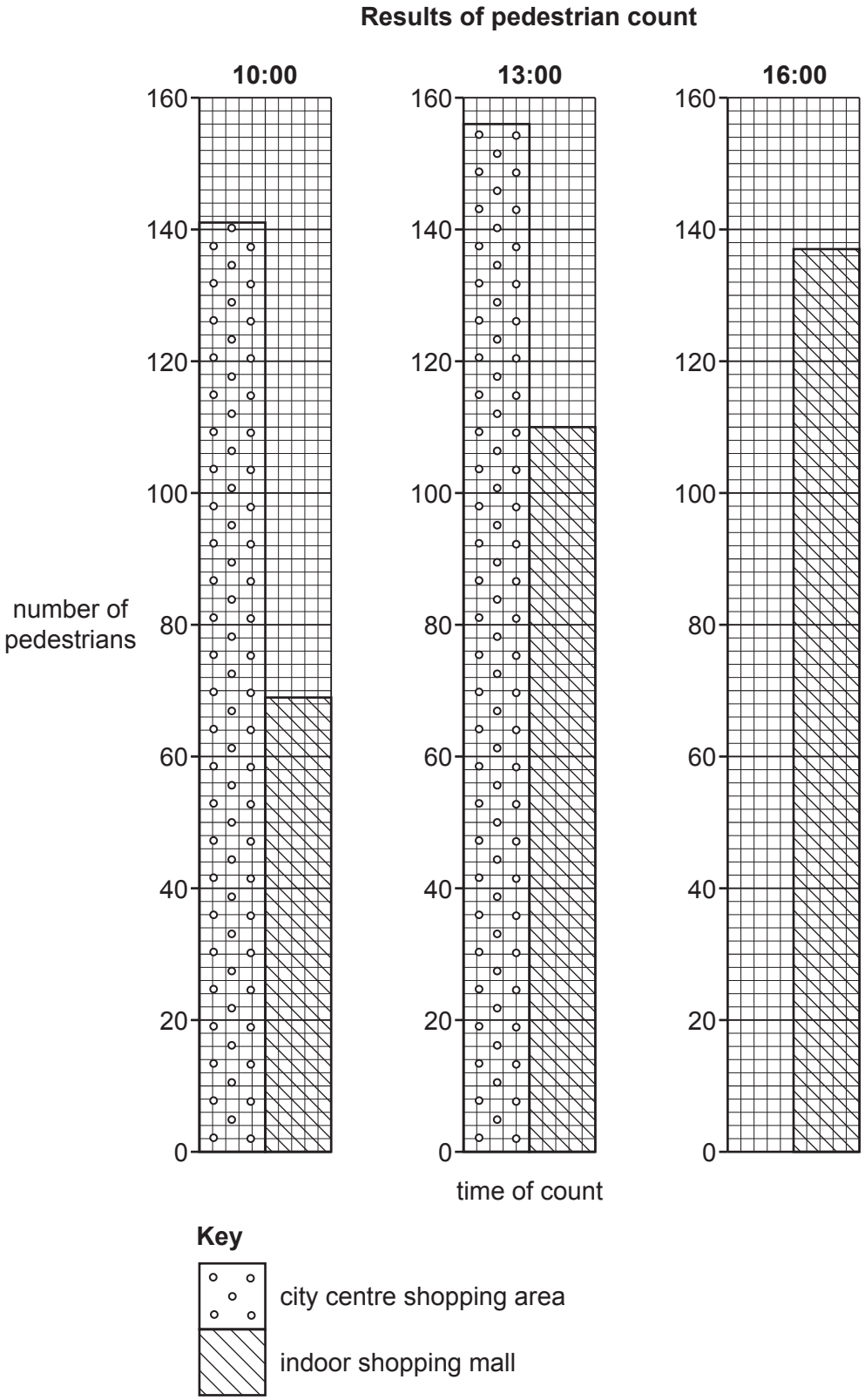

Fig. 1.6

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(iv) Which **one** of the following conclusions about **Hypothesis 2:** *More people visit the city centre shopping area than the indoor shopping mall* is correct? Tick (✓) your decision in the table below. Support your decision with evidence from Fig. 1.6 and Table 1.3.

	tick (✓)
The hypothesis is correct for all times surveyed.	
The hypothesis is correct for some of the times surveyed.	
The hypothesis is incorrect for all times surveyed.	

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(e) As an extension task, two students wanted to find out more about the types of goods sold in shops in the two shopping centres. They had learned in class the difference between high-order and low-order goods.

(i) Which **two** of the following statements about different types of goods are correct? Tick (✓) your choices in the table. [2]

	tick (✓)
High-order goods are usually more expensive than low-order goods.	
Older people buy more high-order goods than low-order goods.	
High-order goods are bought more frequently than low-order goods.	
High-order goods are better quality than low-order goods.	
People travel further to buy high-order goods than low-order goods.	

(ii) The students recorded the different types of shops on a sketch map. Fig. 1.7 on page 9 shows their map of part of the shopping mall.

Use the key to **shade in the shops** selling
- PCs/computer tablets/laptop computers
- magazines/newspapers. [2]

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Sketch map of part of the shopping mall

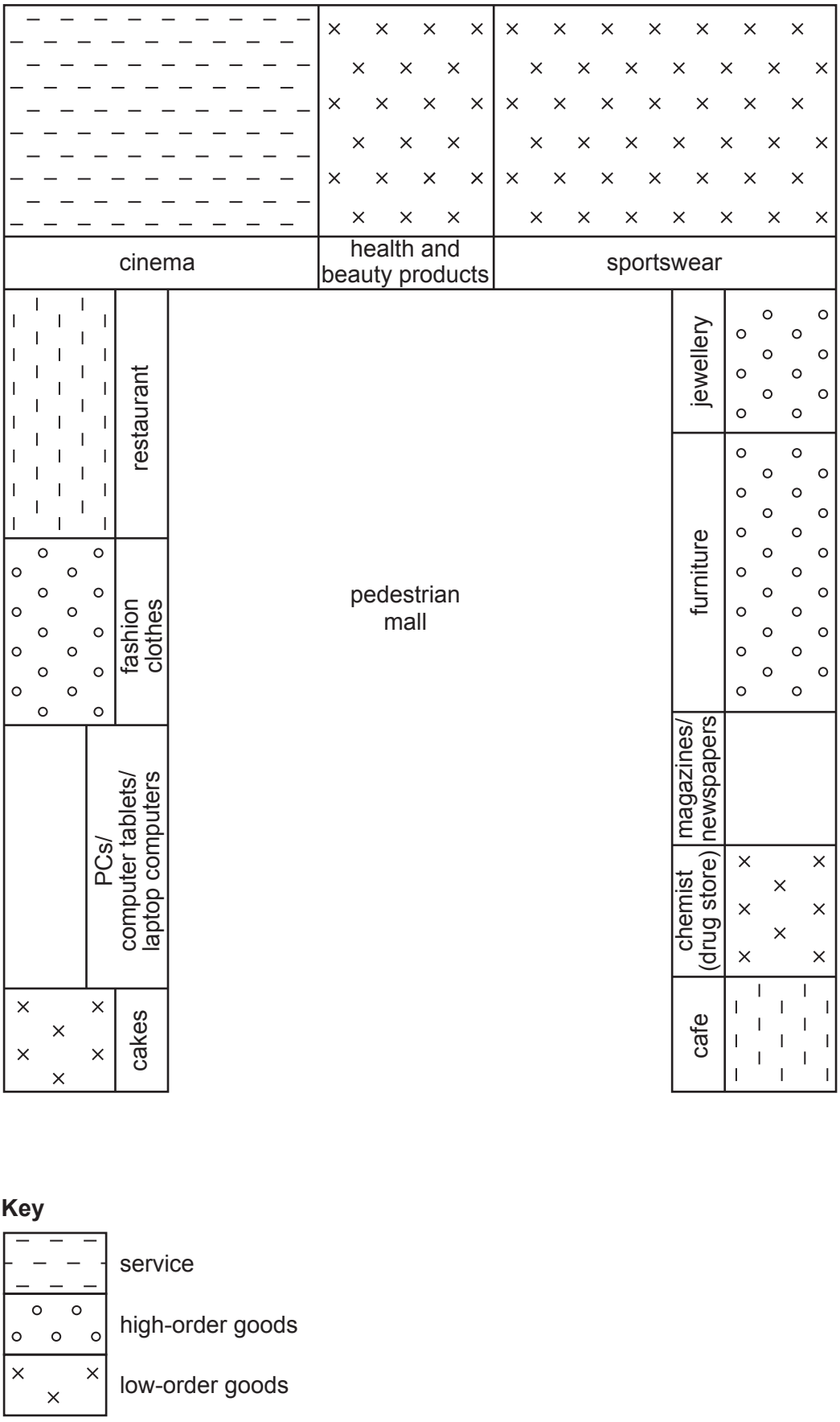

Fig. 1.7

[Total: 30]

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2 Students in Scotland, UK, planned fieldwork at two local beaches (beach A and beach B). The students wanted to investigate differences in beach material and differences in the beach profiles.

(a) Before the students began their fieldwork, their teacher suggested that they needed to prepare for their visit to the beaches.

Use arrows to match the statements in columns X and Y in the table which shows examples of preparations that were made.

X	Y
check the times of high tide	to wear appropriate clothing and take sunblock, if necessary
organise themselves into groups of three	to communicate with their teacher if they have a problem
charge up their mobile (cell) phones	to make sure that the beach is accessible for fieldwork
check the weather forecast	to complete their fieldwork tasks and check their measurements are accurate

[3]

The students investigated the following hypotheses:

Hypothesis 1: *The size of beach material gets larger as distance from the sea increases.*

Hypothesis 2: *Beach material is larger on the beach with a steeper profile.*

(b) To investigate **Hypothesis 1:** *The size of beach material gets larger as distance from the sea increases*, the students measured a sample of beach material every three metres from the low water mark to the top of both beaches.

(i) A completed data recording sheet for one site is shown in Table 2.1.

Table 2.1

Data recording sheet

Location: beach B	
Distance from low water mark: 9 m	
beach material sample number	size of beach material (mm)
1	57
2	48
3	36
4	36
5	33
average size	42

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Describe a possible method the students used to collect the data shown in Table 2.1.

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(ii) The average size of the beach material samples at all sites on both beaches is shown in Table 2.2 (Insert).

On Fig. 2.1, **plot the result** for 18 metres from the low water mark at beach B. [1]

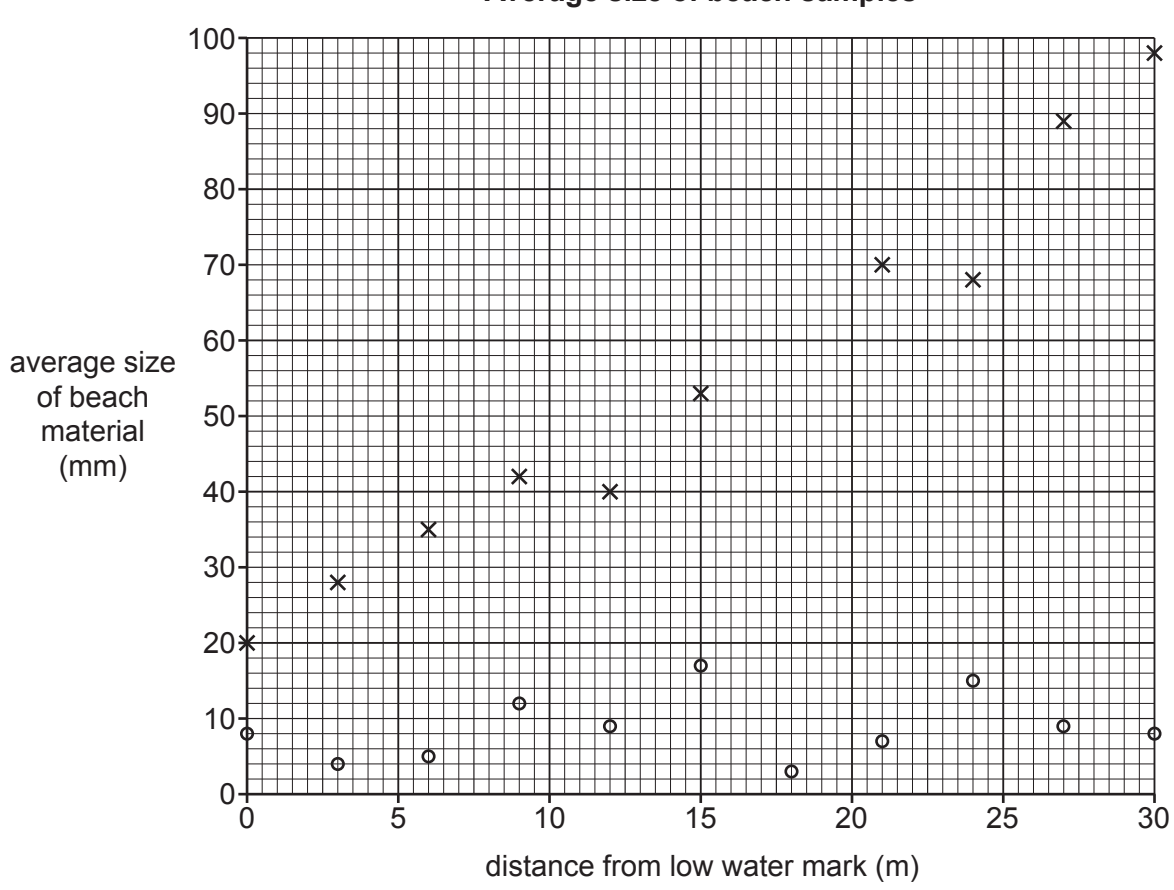

Fig. 2.1

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(iii) Do the results of the fieldwork agree with **Hypothesis 1:** *The size of beach material gets larger as distance from the sea increases*? Tick (✓) your decision and support your decision with data from Table 2.2 and Fig. 2.1.

	tick (✓)
results agree with Hypothesis 1 for **both** beaches	
results agree with Hypothesis 1 for **one** beach	
results agree with Hypothesis 1 for **neither** beach	

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(c) To investigate **Hypothesis 2:** *Beach material is larger on the beach with a steeper profile*, the students measured the angle of slope every 3 metres along both beaches from the low water mark to the top of the beach.

(i) The fieldwork equipment they used is shown in Fig. 2.2 (Insert). Describe how they used this equipment to make their measurements.

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(ii) The students' measurements are shown in Table 2.3 (Insert). Use these results to complete the graph in Fig. 2.3 by **plotting the angle of slope** at 12 m from the sea at beach B **and the average angle of slope** at beach B. [2]

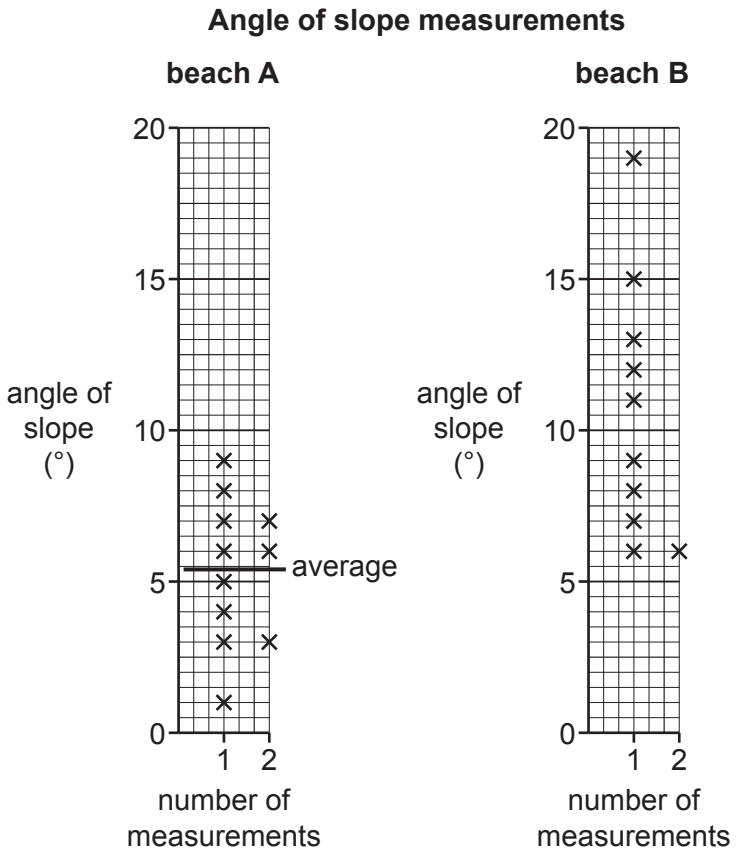

Fig. 2.3

(iii) What would be the students' conclusion to **Hypothesis 2:** *Beach material is larger on the beach with a steeper profile*? Use data from Fig. 2.1 and Table 2.2, and Fig. 2.3 and Table 2.3 to support your decision.

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(d) Some of the coastline in the area where the students did fieldwork is under threat from coastal erosion. The students identified three methods of coastal protection being used. These are shown in Fig. 2.4 (Insert).

As an extension task, two students considered the benefits and disadvantages of the coastal protection methods. They did a bi-polar survey to score each method. Their results are shown in Table 2.4 (Insert).

(i) How could the two students make sure their results were reliable?

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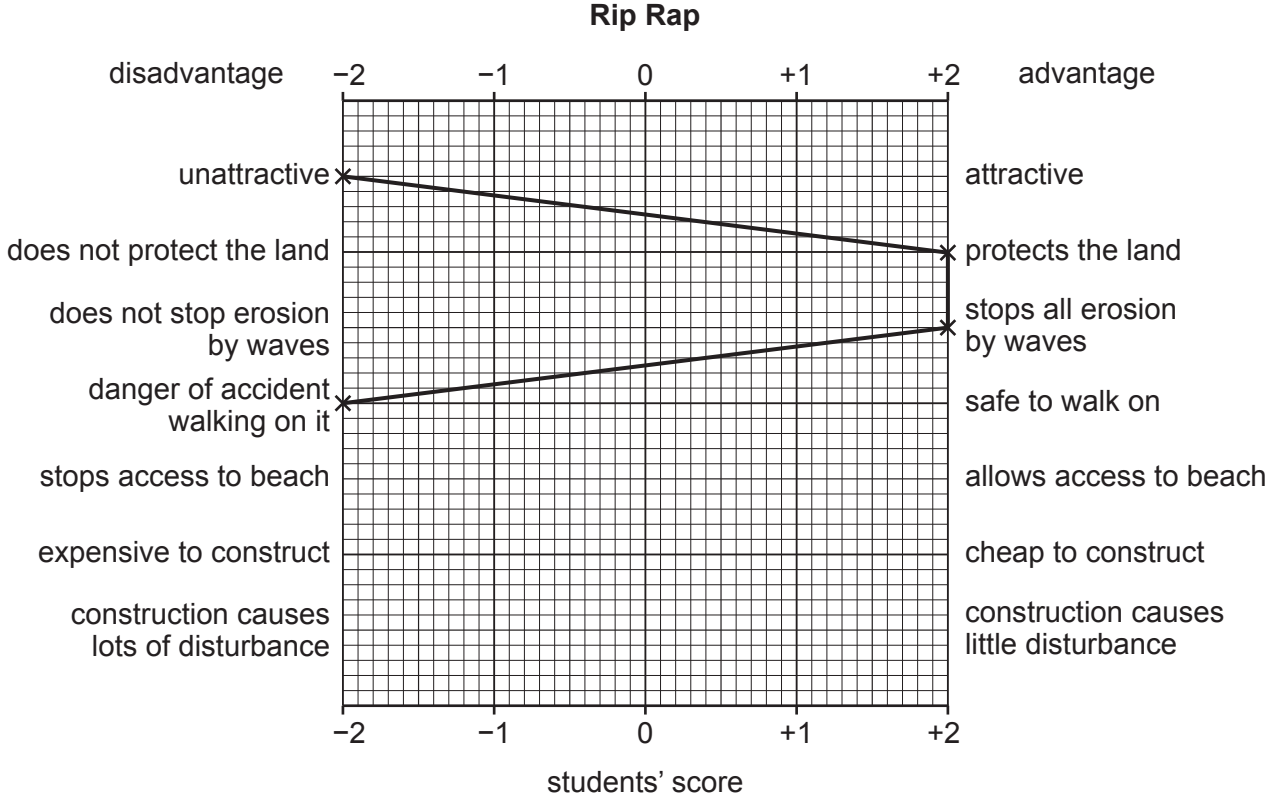
(ii) **Plot the students' scores for the rip rap** to complete Fig. 2.5. [2]



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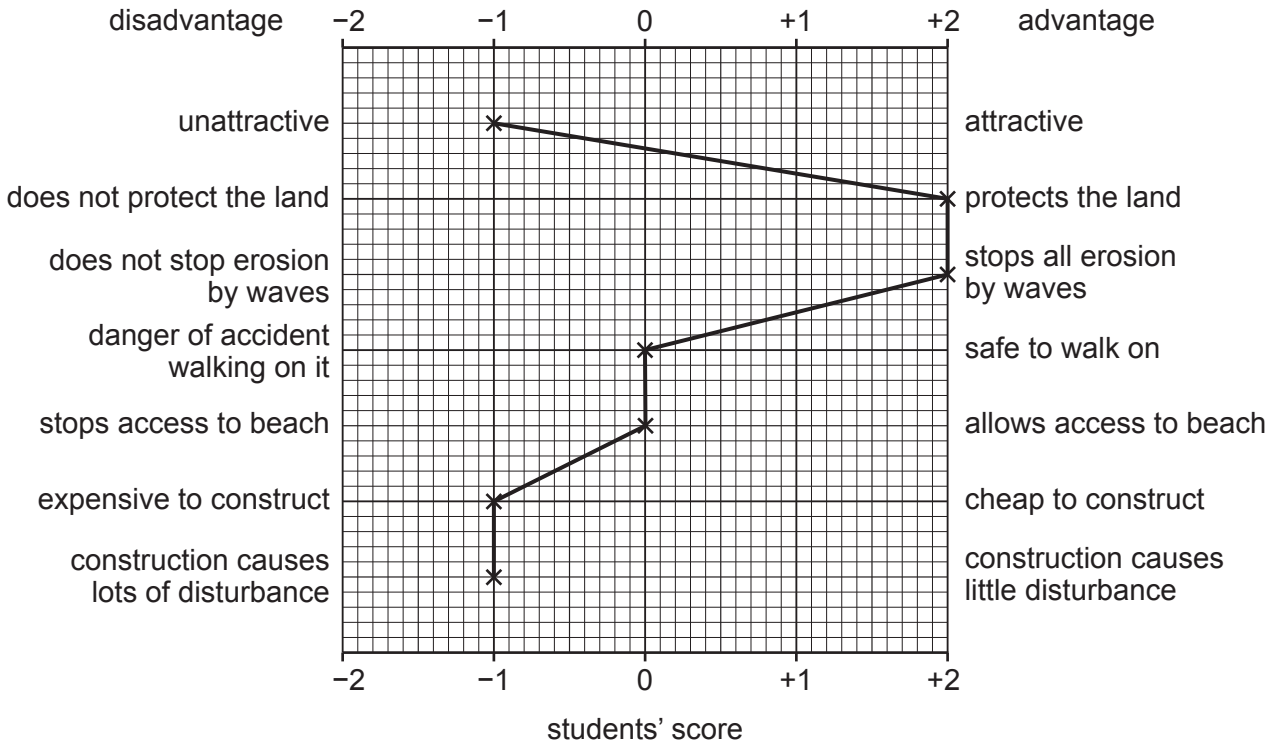

Sea wall

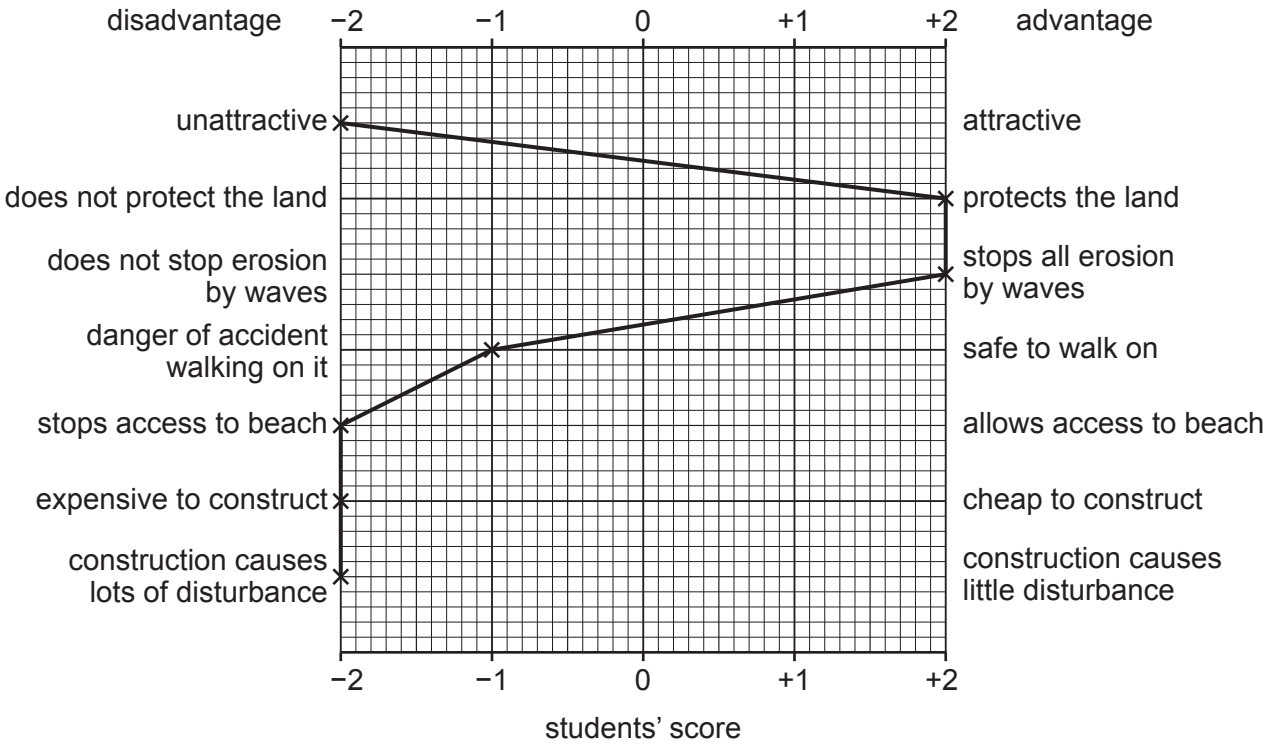

Fig. 2.5

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(iii) Which coastal protection method did the students think was best? **Circle your choice** below and use data from Fig. 2.5 and Table 2.4 to support your choice.

rip rap gabions sea wall

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(iv) Name **one other** method used to protect the coastline from erosion. Describe the method and explain how it protects the coastline.

method .....

description of method .....

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how it protects the coastline.....

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[Total: 30]

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Additional page

If you use the following pages to complete the answer to any question, the question number must be clearly shown.

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