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Cambridge Assessment International Education

Cambridge IGCSE™

CANDIDATE NAME									
CENTRE NUMBER						CANDIDATE NUMBER				

1645839804

GEOGRAPHY **0460/42**

Paper 4 Alternative to Coursework **October/November 2023**

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 were planning fieldwork on a local beach. This is shown in Fig. 1.1 (Insert). The beach has groynes which go from the back of the beach towards the sea.

(a) Describe the beach shown in Fig. 1.1 (Insert).

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..... [2]

(b) Before the students began their fieldwork, their teacher reminded them of the safety precautions they must take.

The following table shows four possible dangerous situations. Suggest **one** different precaution that the students could take to reduce **each** possible danger.

possible danger	possible precaution
Heavy rain is forecast on the day of the fieldwork.	
High cliffs at the back of the beach.	
Powerful waves break onto the beach.	
The beach is covered by the sea at high tide.	

[4]

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[Turn over

The students wanted to find out how beach material varied in size. They investigated the following hypotheses:

Hypothesis 1: *Beach material gets smaller along the beach from north to south between two groynes.*

Hypothesis 2: *The size of beach material increases from the sea towards the back of the beach.*

(c) To investigate **Hypothesis 1** the students collected and measured 20 pieces of beach material at ten sites between two groynes.
The measurements they made are shown in Fig. 1.2 (Insert).

(i) Fig. 1.3 shows one piece of beach material they collected. **Complete the measurements** of this piece of material and record these on the table. [2]

Size of one piece of beach material

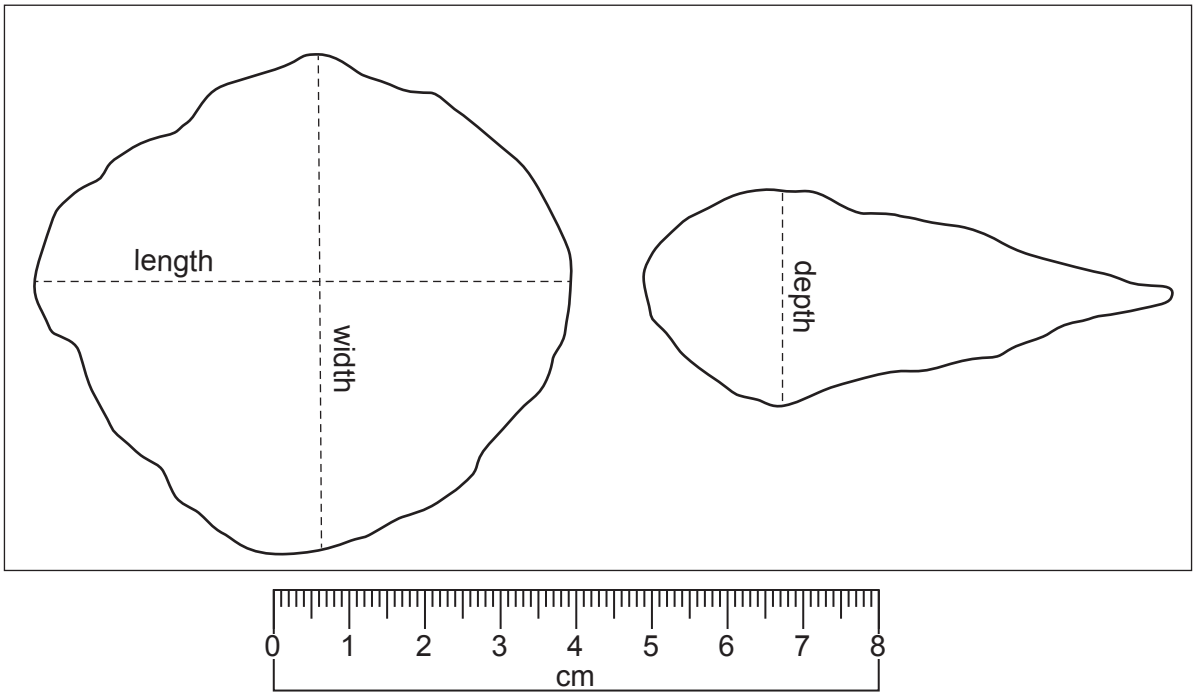

Fig. 1.3

length of beach material	71 mm
width of beach material	..... mm
depth of beach material	..... mm

(ii) In the space below **calculate the average** of the three measurements. [1]

(d) The results of the students' measurements at one site are shown in Fig. 1.4.

(i) The average of the three measurements of beach material number 18 is 52 mm. **Plot this measurement** on Fig. 1.4. [1]

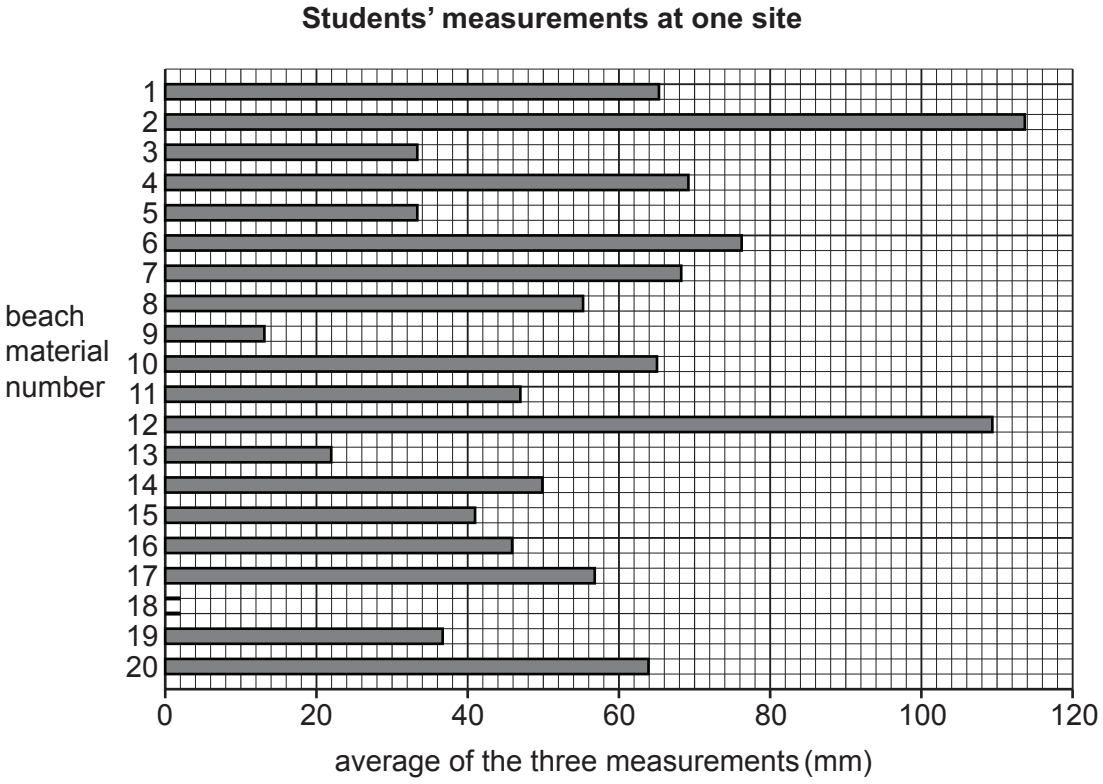

Fig. 1.4

(ii) Which piece of beach material collected at the site shown in Fig. 1.4 has the largest average of the three measurements?

beach material number ..... [1]

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(e) The results of the students' measurements for the ten sites between two groynes are shown in Table 1.1 (Insert).

(i) **Plot the average size of beach material** at 20 m from the north groyne on Fig. 1.5. [1]

Average size of beach material at ten sites

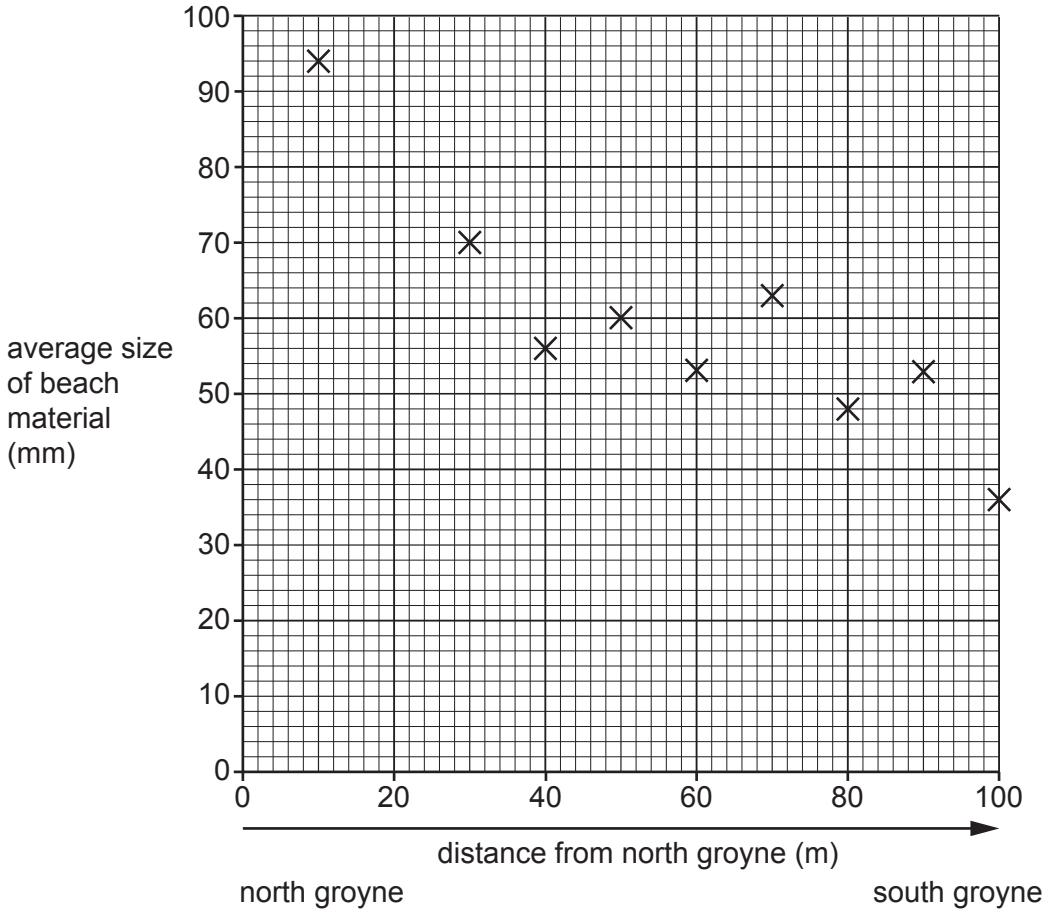

Fig. 1.5

(ii) What is the correct conclusion to **Hypothesis 1:** *Beach material gets smaller along the beach from north to south between two groynes*? Tick (✓) your decision and support it with evidence from Fig. 1.5 and Table 1.1.

	tick (✓)
The hypothesis is completely true.	
The hypothesis is generally true.	
The hypothesis is false.	

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..... [3]

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(f) Movement of material along a beach, which was tested in **Hypothesis 1**, is influenced by longshore drift.
Describe and explain the process of longshore drift. You may use a diagram in your answer.

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[4]

(g) To test **Hypothesis 2:** *The size of beach material increases from the sea towards the back of the beach*, the students collected beach material at three sites at different distances from the sea. Their results for one site are shown in Table 1.2 (Insert).

(i) Use the results in Table 1.2 to **complete the histogram** for site 3 on Fig. 1.6. [2]

Average size of beach material at the three sites

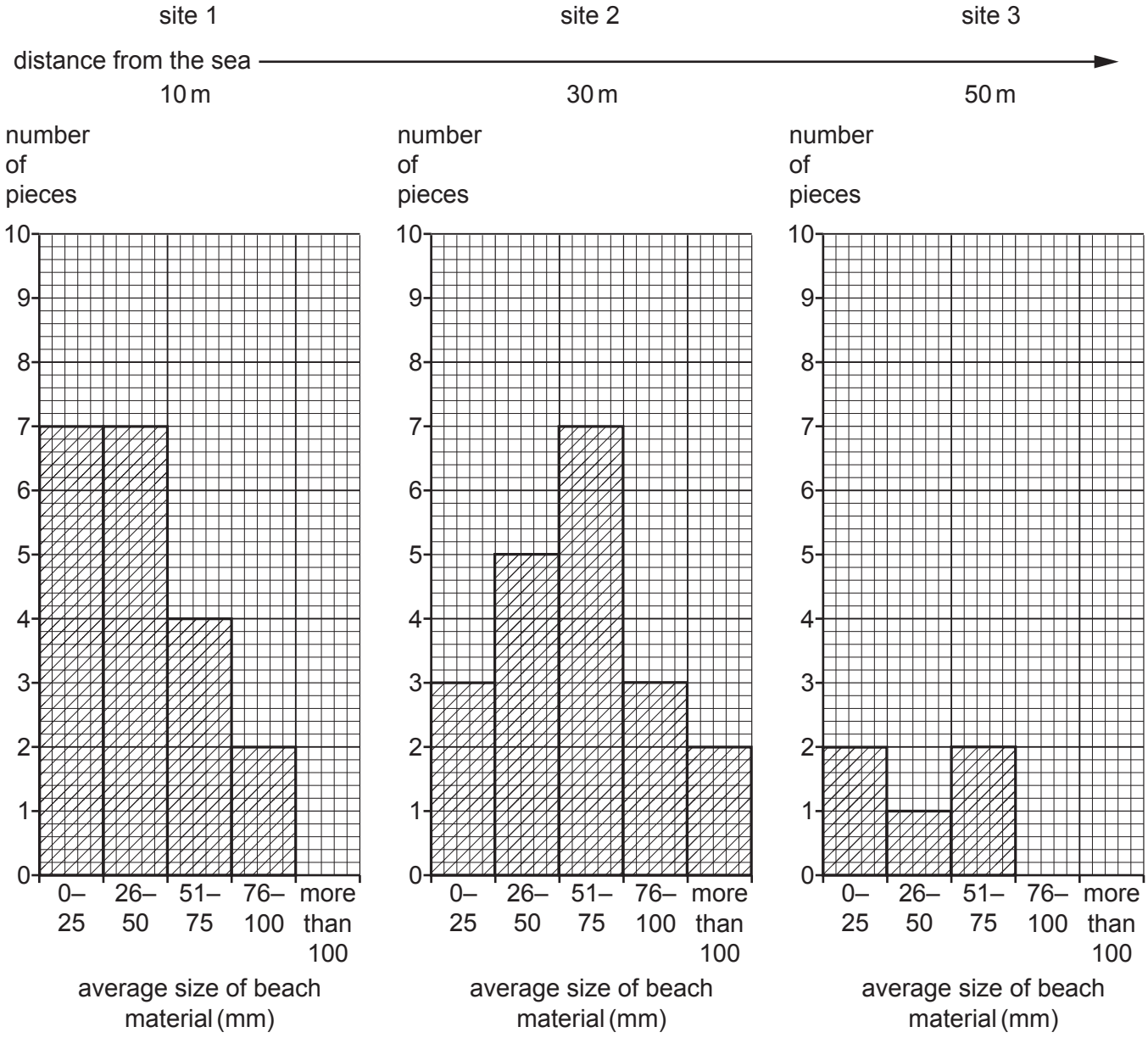

Fig. 1.6

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(ii) Do these results support **Hypothesis 2:** *The size of beach material increases from the sea towards the back of the beach*? Support your decision with evidence from Fig. 1.6 and Table 1.2.

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..... [3]

(iii) Suggest **two** reasons why the size of beach material varies between the sea and the back of the beach.

1 .....

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2 .....

..... [2]

(h) As an extension activity the students measured the beach profile from the edge of the sea to the back of the beach. Their equipment is shown in Fig. 1.7 (Insert). Describe how they would use this equipment to measure the beach profile.

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..... [4]

[Total: 30]

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[Turn over

2 Students who live in the Peak District, a rural area in northern England, did some fieldwork about the impacts of a quarry in the local area.

(a) The quarry is shown at **X** in Fig. 2.1 (Insert).

(i) In which sector of employment is quarrying included? Tick (✓) your answer. [1]

sector of employment	tick (✓)
primary	
secondary	
tertiary	
quaternary	

(ii) Describe **two** features of the quarry shown at **X** in Fig. 2.1.

1 .....

.....

2 .....

..... [2]

(b) The students searched the internet to find out the percentages of people employed in different industries in the Peak District. Their results are shown in Table 2.1 (Insert).

Use the data in Table 2.1 to **complete Fig. 2.2**. [2]

People employed in different industries (%)

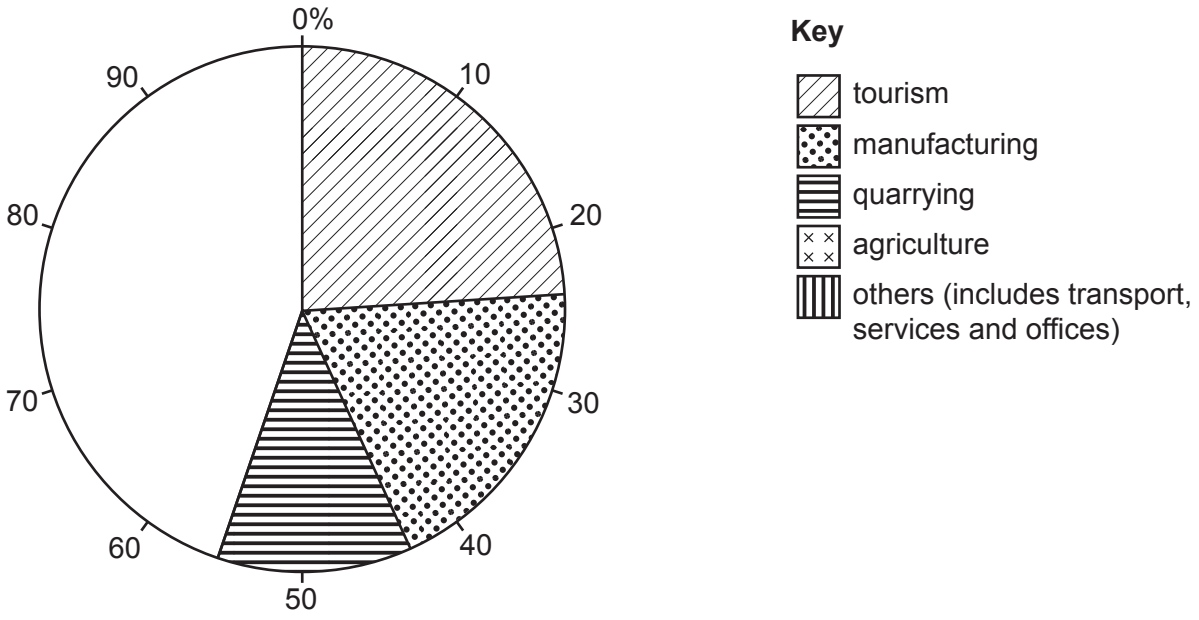

Fig. 2.2

The students tested the following hypotheses:

Hypothesis 1: *Quarrying brings more benefits than problems to the local area.*

Hypothesis 2: *Some local businesses are worse affected by quarrying than others.*

(c) To investigate **Hypothesis 1** the students produced a questionnaire to use with local residents.

From the list below, identify **three** features of a good questionnaire. Tick (✓) your choices.

	tick (✓)
Only contains questions which can be answered yes or no.	
Space to write in the age of the person answering the questions.	
Explains to the person answering why the questions are being asked.	
Includes a variety of open and closed questions.	
The first line is for the name of the person answering the questions.	
Questions are straightforward and easy to understand.	

[3]

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(d) The students included the following questions in their questionnaire.

question 1	What do you think are the benefits of the quarry for the local area?
question 2	What do you think are the problems caused by the quarry in the local area?
question 3	Overall, do you think the quarry has been a good development for the local area?

The results of these questions are shown in Tables 2.2 and 2.3 (Insert).

(i) Under which **benefit** shown in Table 2.2 would the following answer be included?

'The sports and social club and the new village hall have been built with money donated by the owners of the quarry.'

.....

..... [1]

(ii) Under which **problem** shown in Table 2.2 would the following answer be included?

'Walking through the village is quite dangerous.'

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..... [1]

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(iii) Use the results in Table 2.2 to **complete Fig. 2.4**. [3]

Answers to Questions 1 and 2 in the questionnaire

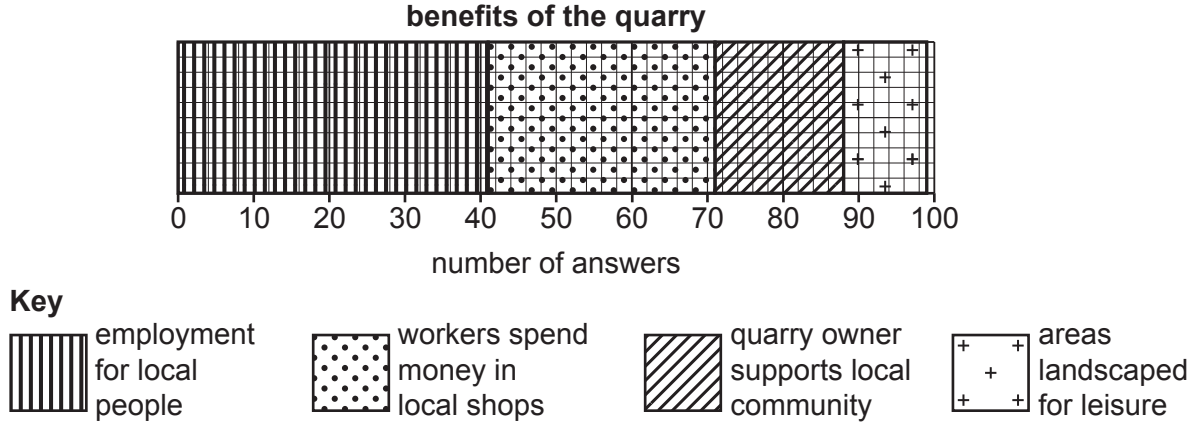

Fig. 2.3

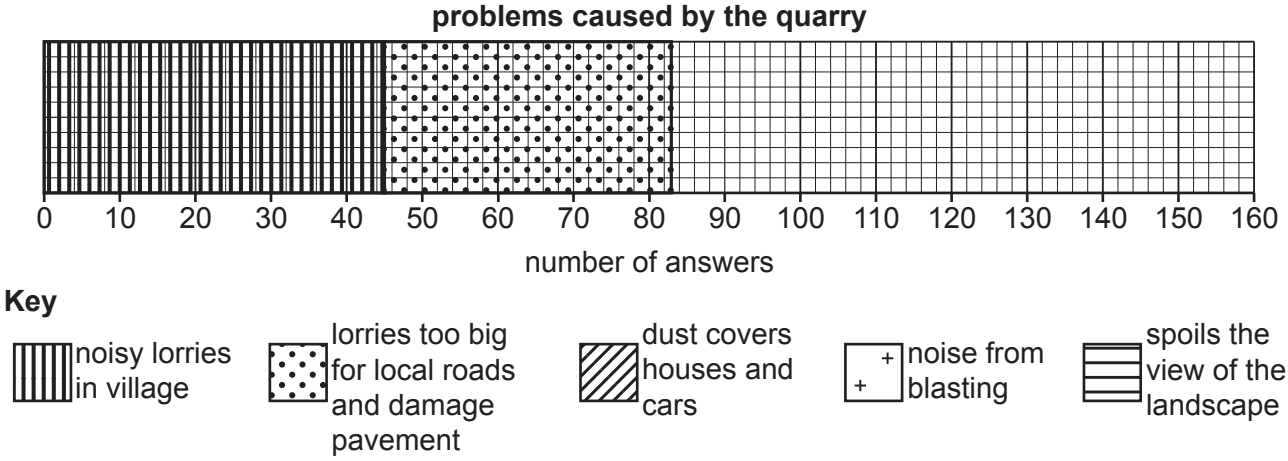

Fig. 2.4

(iv) What conclusion did the students make to **Hypothesis 1:** *Quarrying brings more benefits than problems to the local area*? Support your answer with data from Figs. 2.3 and 2.4, and Tables 2.2 and 2.3.

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..... [4]

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(e) To test **Hypothesis 2:** *Some local businesses are worse affected by quarrying than others* the students interviewed local business owners and their workers. They asked them how much they were affected by noise and dust from the quarry and congestion on local roads.

The results of their interviews are shown in Table 2.4 (Insert).

(i) Use the results in Table 2.4 to **complete the bar graph** for transport on Fig. 2.5. [2]

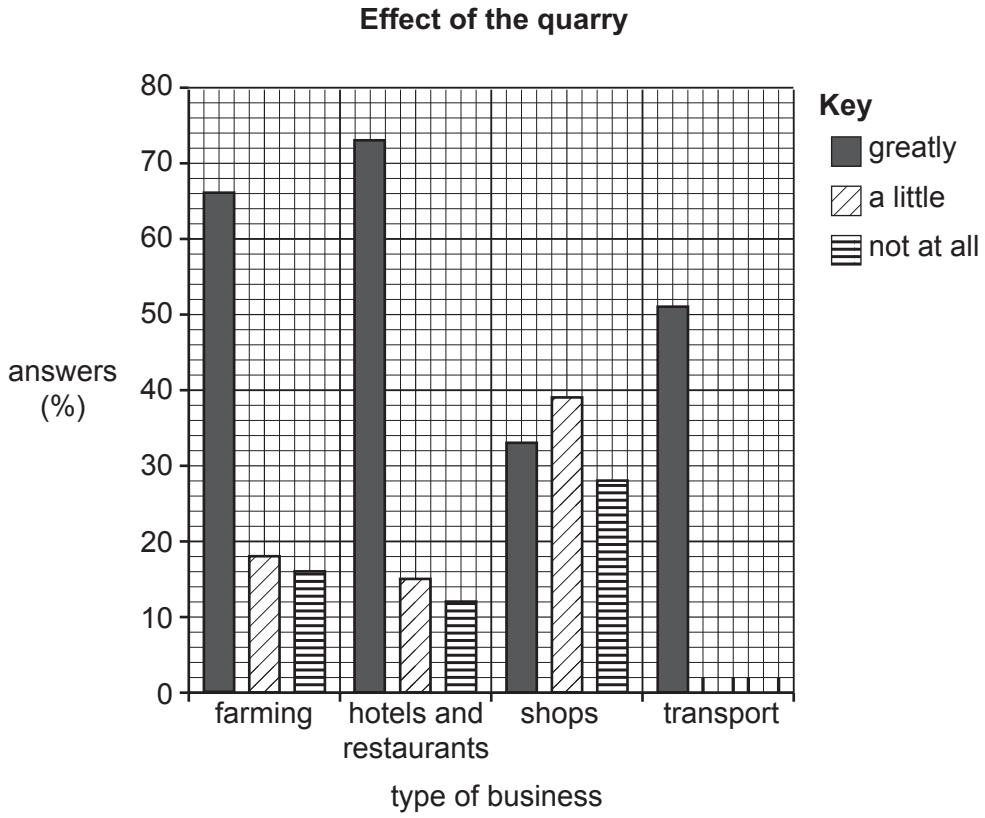

Fig. 2.5

(ii) The students made the conclusion that **Hypothesis 2:** *Some local businesses are worse affected by quarrying than others*, was **true**. Do you agree with this conclusion? Support your decision with evidence from Fig. 2.5 and Table 2.4.

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..... [4]

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(iii) Complete the following table to suggest **different** effects the quarry might have on the businesses listed.

type of business	impact of the quarry	effect on business
farming	dust from blasting	....
hotels and restaurants	noise from blasting	....
transport	congestion on roads	....

[3]

(f) To extend their fieldwork the students visited a quarry which was no longer used. The former quarry had been developed in ways like those shown in Fig. 2.6 (Insert).
Suggest how these developments in the disused quarry might benefit local people.

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[Total: 30]

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Additional pages

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

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