Cambridge Assessment International Education

Cambridge IGCSE™

CANDIDATE NAME									
CENTRE NUMBER						CANDIDATE NUMBER				

2588202949

GEOGRAPHY **0460/43**

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.

1 A class of students in northern England were learning how to collect weather data. The school weather station contained a variety of weather measuring instruments, including traditional instruments and digital equipment linked to the school computer network.

(a) Fig. 1.1 (Insert) is a student's diagram of a Stevenson Screen. Describe **three** features of this piece of equipment and explain why each feature is important.

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[6]

The students collected weather data over three days to investigate different weather features. Two of the hypotheses which they tested were:

Hypothesis 1: *Rainfall amounts fall when atmospheric pressure rises.*

Hypothesis 2: *There is a relationship between wind speed and the direction from which the wind blows.*

To investigate **Hypothesis 1**, two students measured atmospheric pressure and rainfall. They collected data every three hours using a combination of traditional and digital instruments.

(b) (i) A student's diagram of a rain gauge is shown in Fig. 1.2 (Insert). Explain how the students would **use** the rain gauge to measure rainfall.

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..... [4]

(ii) Give **three** factors which must be considered when choosing a site for the rain gauge.

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[3]

(c) The atmospheric pressure and rainfall measurements which the students recorded are shown in Table 1.1 (Insert).

(i) At what day and time was the lowest atmospheric pressure recorded?

day ..... time ..... [1]

(ii) On Fig. 1.3 **plot the data** recorded on Wednesday at 18:00 hours. [1]

(iii) On Fig. 1.3 **draw in the best-fit line**. [1]

Atmospheric pressure and rainfall

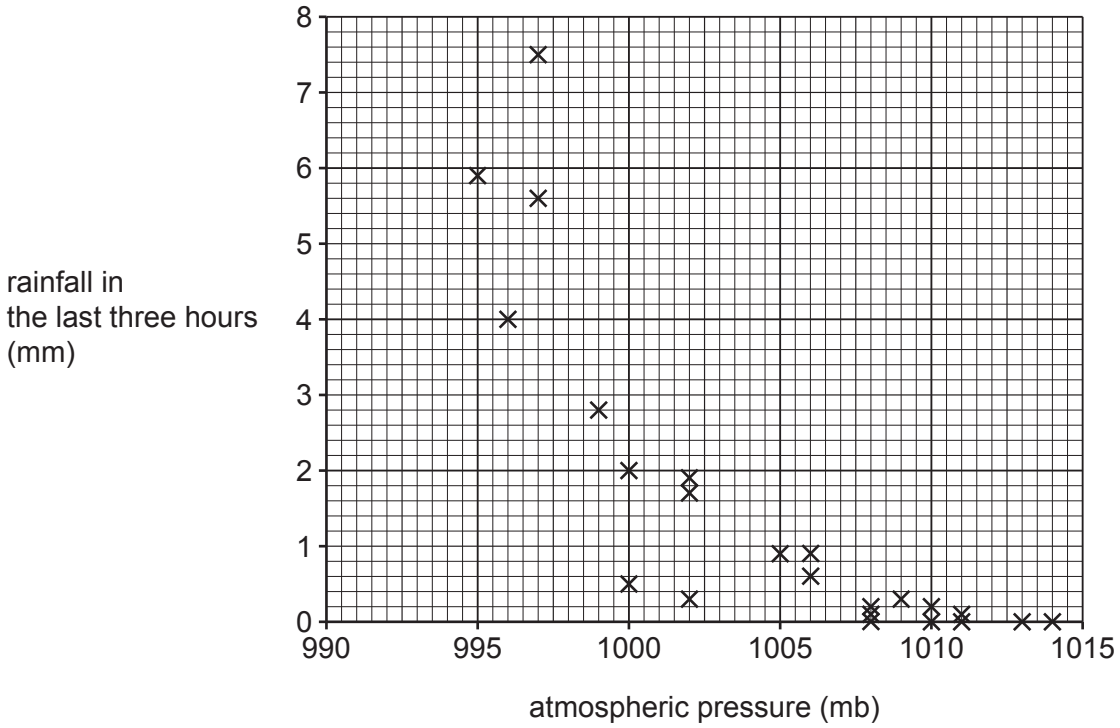

Fig. 1.3

(iv) What conclusion would the students make to **Hypothesis 1:** *Rainfall amounts fall when atmospheric pressure rises*? Support your conclusion with data from Fig. 1.3 and Table 1.1.

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..... [3]

(d) To investigate **Hypothesis 2:** *There is a relationship between wind speed and the direction from which the wind blows*, two other students took wind measurements every three hours.

(i) What piece of equipment is used to measure wind **speed**? Tick (✓) **one** answer. [1]

	tick (✓)
anemometer	
barometer	
hygrometer	
thermometer	

(ii) Explain how the wind vane shown in Fig. 1.4 (Insert) is used to show the direction from which the wind is blowing.

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..... [2]

(iii) The students' measurements are shown in Table 1.2 (Insert). Use the results **to plot the following measurements** on Fig. 1.5.

wind direction and wind speed on Wednesday at 18:00 hours [1]

Relationship between wind speed and direction wind blows from

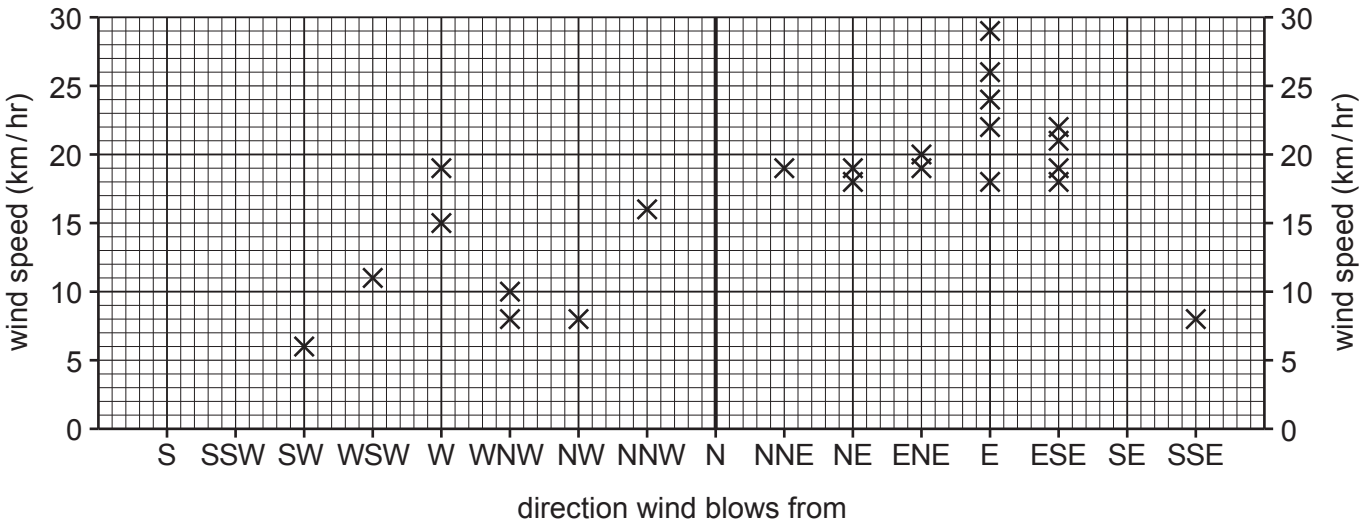

Fig. 1.5

(iv) The students decided that **Hypothesis 2:** *There is a relationship between wind speed and the direction from which the wind blows* was **true**. Support their conclusion with evidence from Fig. 1.5 and Table 1.2.

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(e) Another pair of students studied cloud types over the three days. Fig. 1.6 (Insert) shows three different types of cloud recorded by the students.

Name the cloud type in each photograph and give the correct description of the cloud in the table below. **Choose your descriptions** from the following:

- dark grey clouds which extend from low to high altitude
- white clouds which look like feathers at high altitude
- grey clouds which occur in layers at low altitude
- clouds that look like cotton wool and are separate from each other at low altitude.

	name of cloud type	**description of cloud**
type **A**		....
type **B**		....
type **C**		....

[4]

[Total: 30]

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2 Students were doing fieldwork in their local town centre (CBD). They wanted to find out how it had changed and what people who came to the town centre thought about it. They tested the following hypotheses:

Hypothesis 1: *Shops and services in the town centre changed between 1990 and 2019.*

Hypothesis 2: *Opinions about the town centre vary between different age groups.*

(a) First the students completed a map of the land use on the main streets in the town centre. Their map is shown in Fig. 2.1.

(i) Use the map key to identify the shop or service which occupies the building labelled **X** on Fig. 2.1.

..... [1]

(ii) Building **Y** on Fig. 2.1 is a flower shop (florist). Use the map key to **label this building** on Fig. 2.1. [1]

(iii) Identify the building located 125 m south-west of the church.

..... [1]

(iv) Describe the distribution of offices shown on Fig. 2.1.

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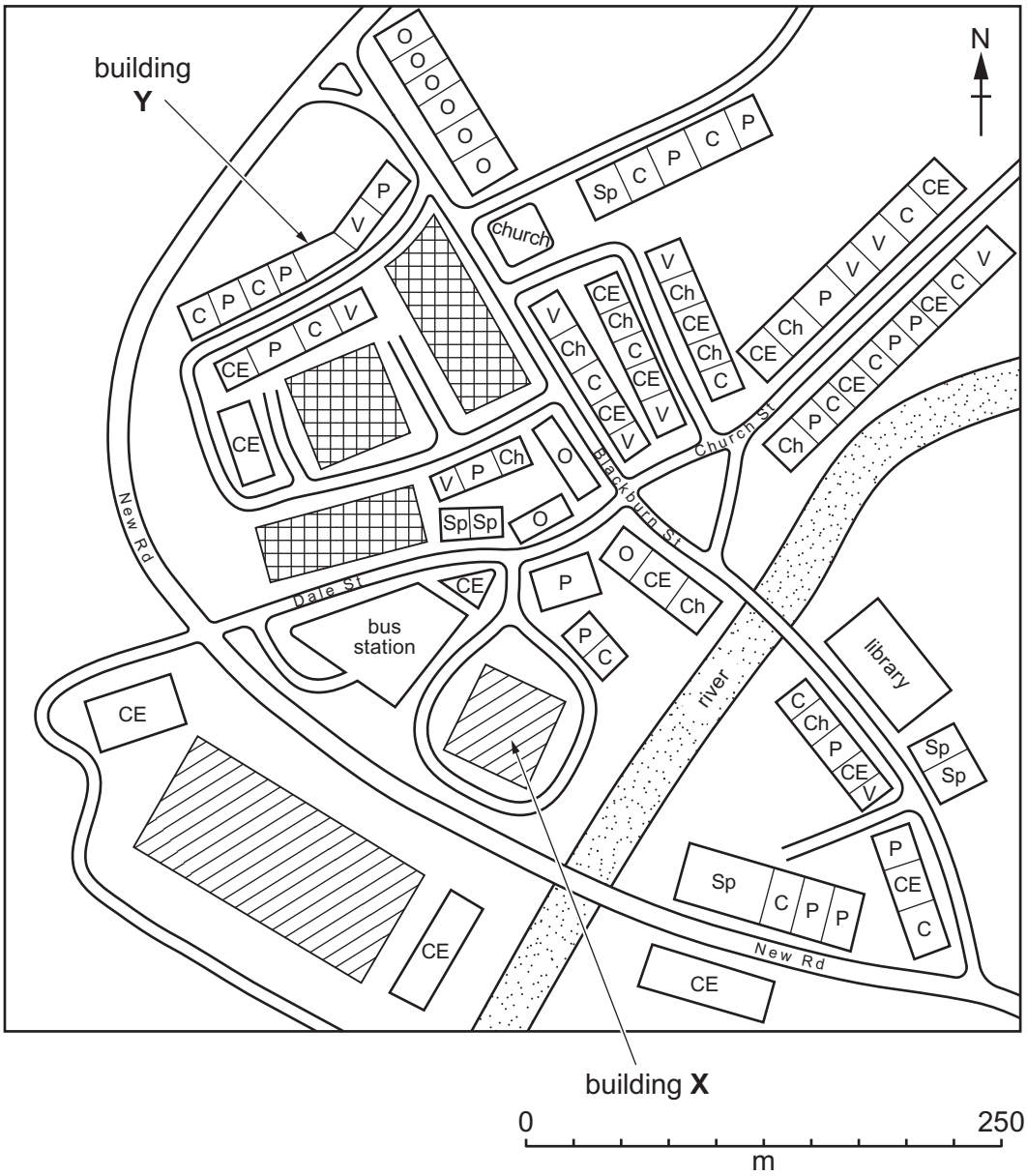
..... [2]

Land use map of town centre in 2019



Key

household goods store	
supermarket mainly selling food	
convenience goods (e.g. baker, newsagent)	C
specialist non-food (e.g. electrical, jewellery, florist, travel agent)	Sp
personal services (e.g. hairdresser, barber, nail bar, tattooist)	P
charity shop	Ch
catering and entertainment (e.g. café, restaurant, bar, nightclub)	CE
office (e.g. finance, solicitor, estate agent, bank)	O
vacant (empty) shop	V

Fig. 2.1

[Turn over

(b) To investigate **Hypothesis 1:** *Shops and services in the town centre changed between 1990 and 2019*, the students compared the number of different shops and services in 1990 and 2019. Their results are shown in Table 2.1 (Insert).

(i) The students obtained the data for 1990 from an old map of the town centre. Which **one** of the following is the correct description of the data for 1990?
Tick (✓) your choice. [1]

	tick (✓)
data collected by the students for their own use	
data collected by other people and used by the students	
data collected by the students and used by other people	

(ii) The students used the results in Table 2.1 to draw Fig. 2.2. **Plot the number** of vacant (empty) shops in 1990 and 2019. [2]

Number of shops and services in the town centre

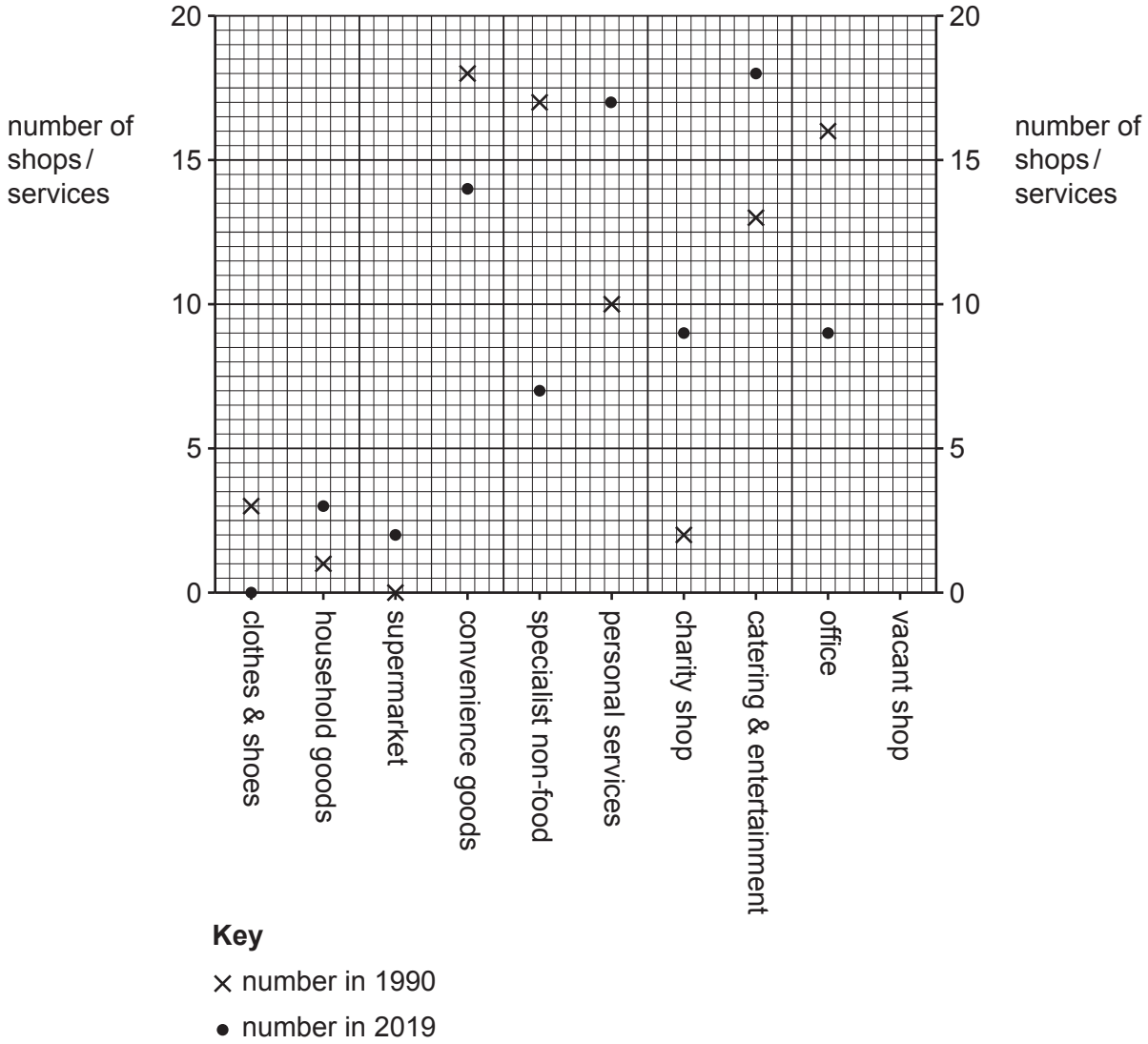


Fig. 2.2

(iii) What conclusion would the students make about **Hypothesis 1:** *Shops and services in the town centre changed between 1990 and 2019*? Support your decision with evidence from Fig. 2.2 and Table 2.1.

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..... [4]

(c) To investigate **Hypothesis 2:** *Opinions about the town centre vary between different age groups*, the students used a questionnaire with people in the town centre. The students questioned 40 people in each of three age groups (under 30, 30 to 60, over 60). The questionnaire is shown in Fig. 2.3 (Insert).

Suggest **two** problems which the students may have faced in completing their questionnaire.

1 .....

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2 .....

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[2]

(d) (i) The results of Question 1 in the questionnaire are shown in Table 2.2 (Insert). Use the results to **complete the pie graph**, Fig. 2.4. [2]

How often do you visit the town centre?

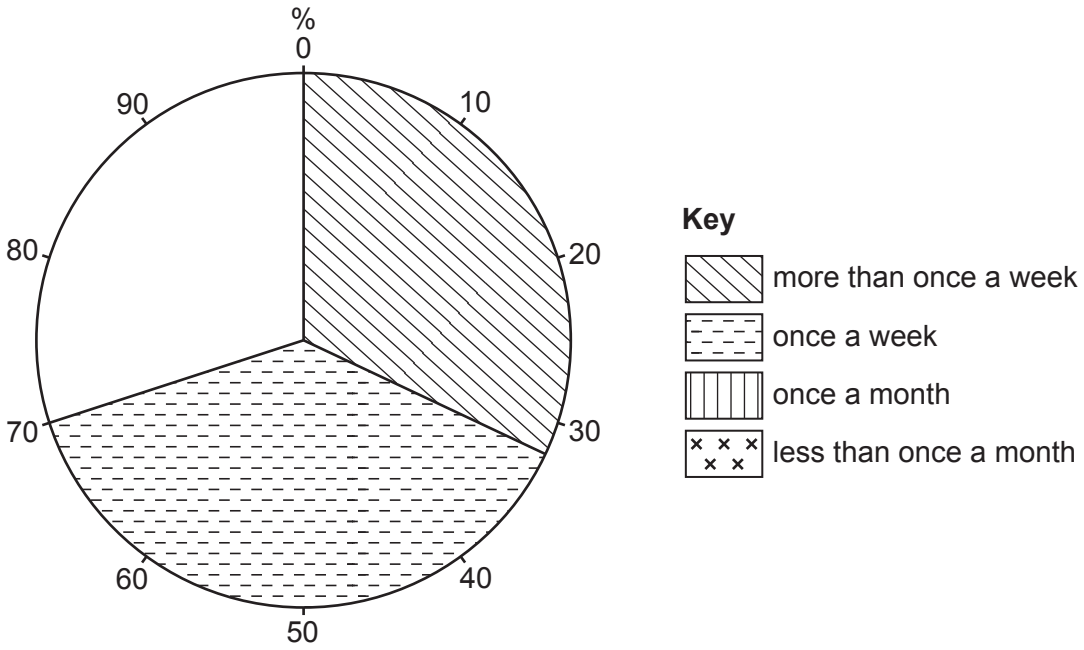

Fig. 2.4

(ii) The results of Question 2 in the questionnaire are shown in Table 2.3 (Insert).
Under which good point would the following answer be included?
'I go to the shops which sell antiques and animals.'

good point ..... [1]

(iii) The results of Question 3 in the questionnaire are shown in Table 2.4 (Insert).
Under which bad point would the following answer be included?
'There is no indoor shopping centre where you can browse even if the weather is horrible.'

bad point ..... [1]

(iv) Use the results for Question 2 in Table 2.3 to **complete the over 60 bar graph** for good points in Fig. 2.5. [2]

Good points about the town centre

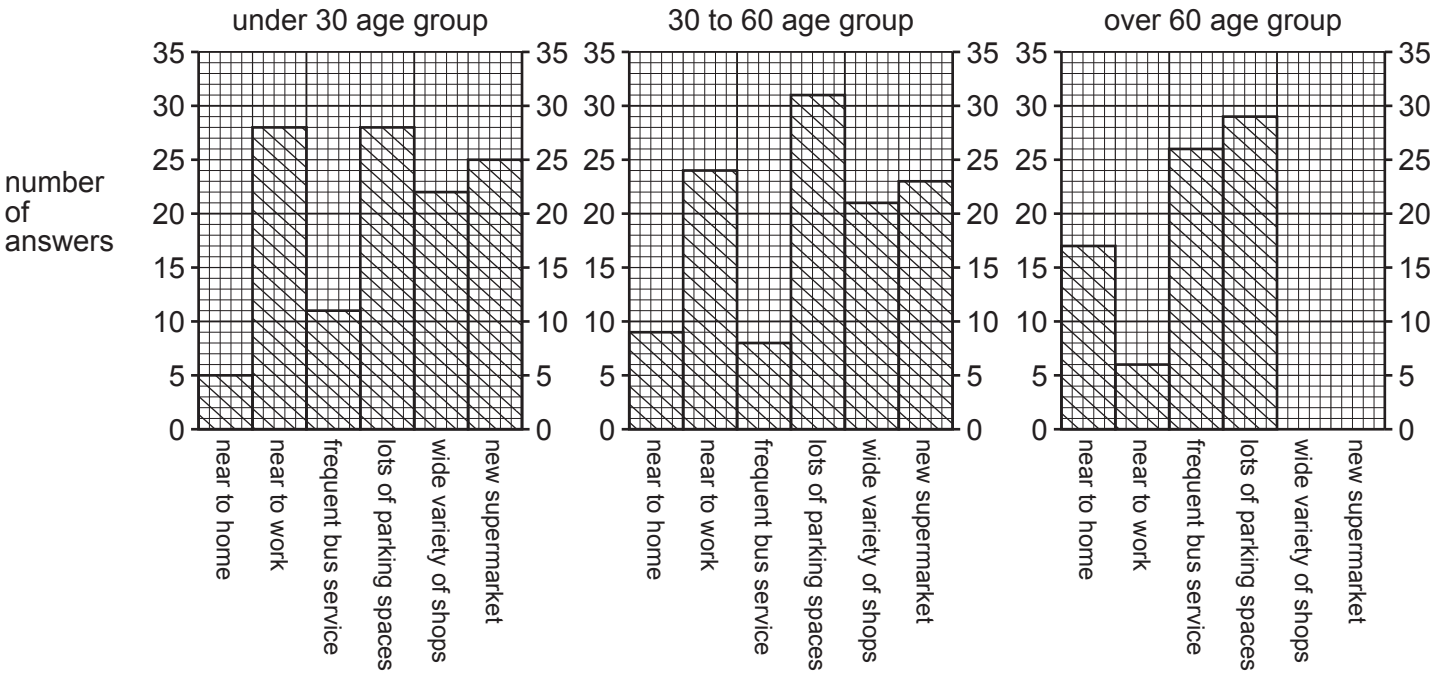

Fig. 2.5

Bad points about the town centre

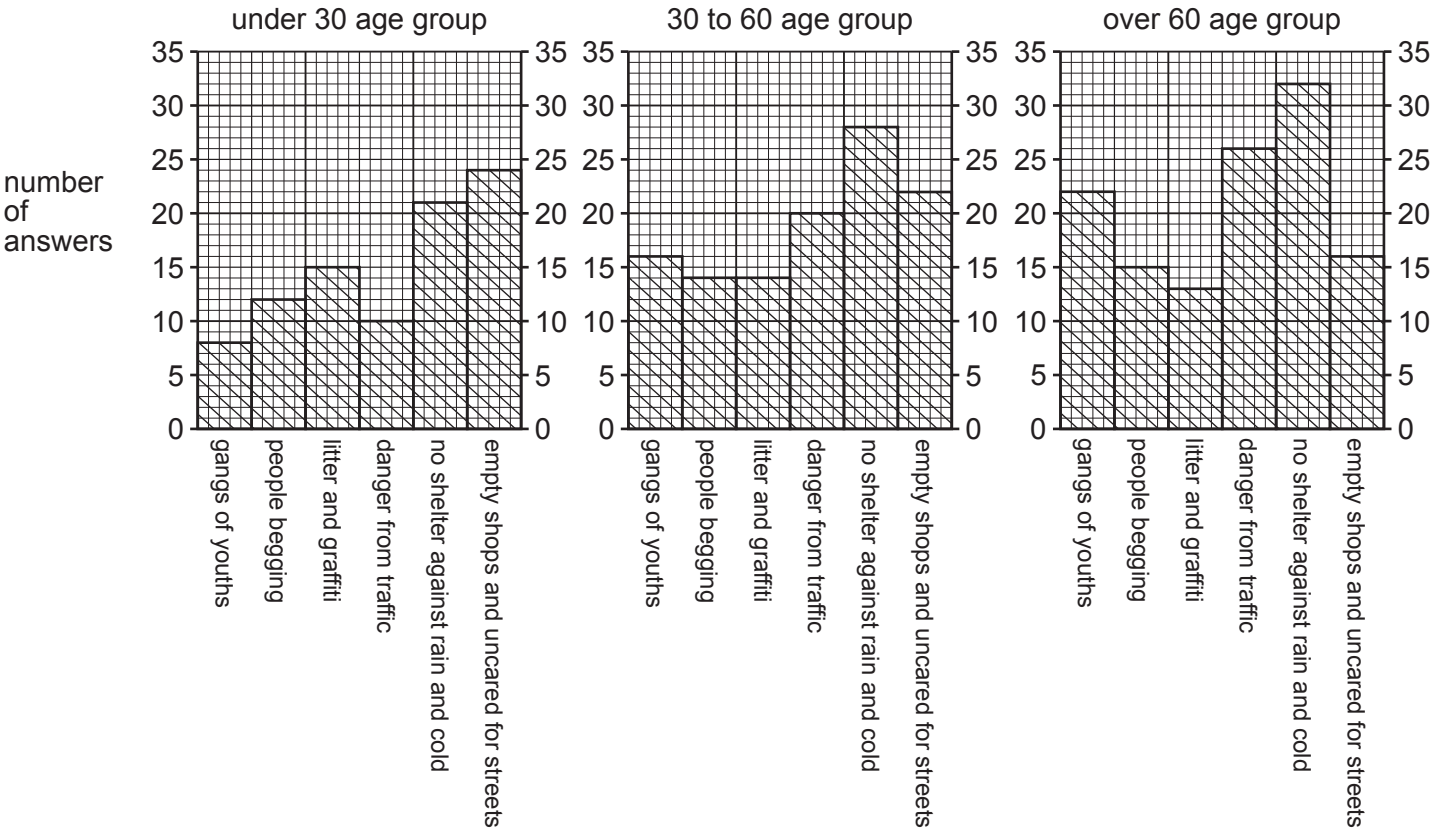

Fig. 2.6

(v) The students reached the conclusion that **Hypothesis 2:** *Opinions about the town centre vary between different age groups* was **partly true**. Support this conclusion with evidence from Figs. 2.5 and 2.6, and Tables 2.3 and 2.4.

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..... [3]

(e) The answers to Question 4 in their questionnaire are shown in Table 2.5 (Insert).

(i) From Table 2.5, identify the improvement idea where there was most agreement between the three age groups.

improvement idea

..... [1]

(ii) Suggest reasons why different numbers of the under 30 age group and the over 60 age group selected the following improvement ideas:

more entertainment and nightlife venues

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make the centre traffic-free

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..... [2]

(f) To extend their investigation, one student wanted to find out where the boundary of the CBD was located. Describe a fieldwork method they could use to identify the boundary of the CBD.

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[Total: 30]

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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