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GEOGRAPHY **0460/42**

Paper 4 Alternative to Coursework **October/November 2025**

1 hour 30 minutes

You must answer on the question paper.

You will need: Insert (enclosed)
Calculator
Protractor
Ruler

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.

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

This document has **16** pages. Any blank pages are indicated.

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1 Students in Shanghai, China investigated differences in temperatures and wind speed between the city centre and the rural-urban fringe. They chose five fieldwork sites in each area.

The students investigated the following hypotheses:

Hypothesis 1: *Temperatures are higher in the city centre than in the rural-urban fringe.*

Hypothesis 2: ***Average*** *wind speeds are higher in the city centre than in the rural-urban fringe.*

(a) What is meant by the 'rural-urban fringe' of a city?

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..... [2]

(b) The students used a digital thermometer to measure temperature. This is shown in Fig. 1.1 (Insert).

(i) Give **three** advantages of using a digital thermometer such as the one shown in Fig. 1.1.

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[3]

(ii) Suggest **two** ways that the students could check that their temperature measurements were correct.

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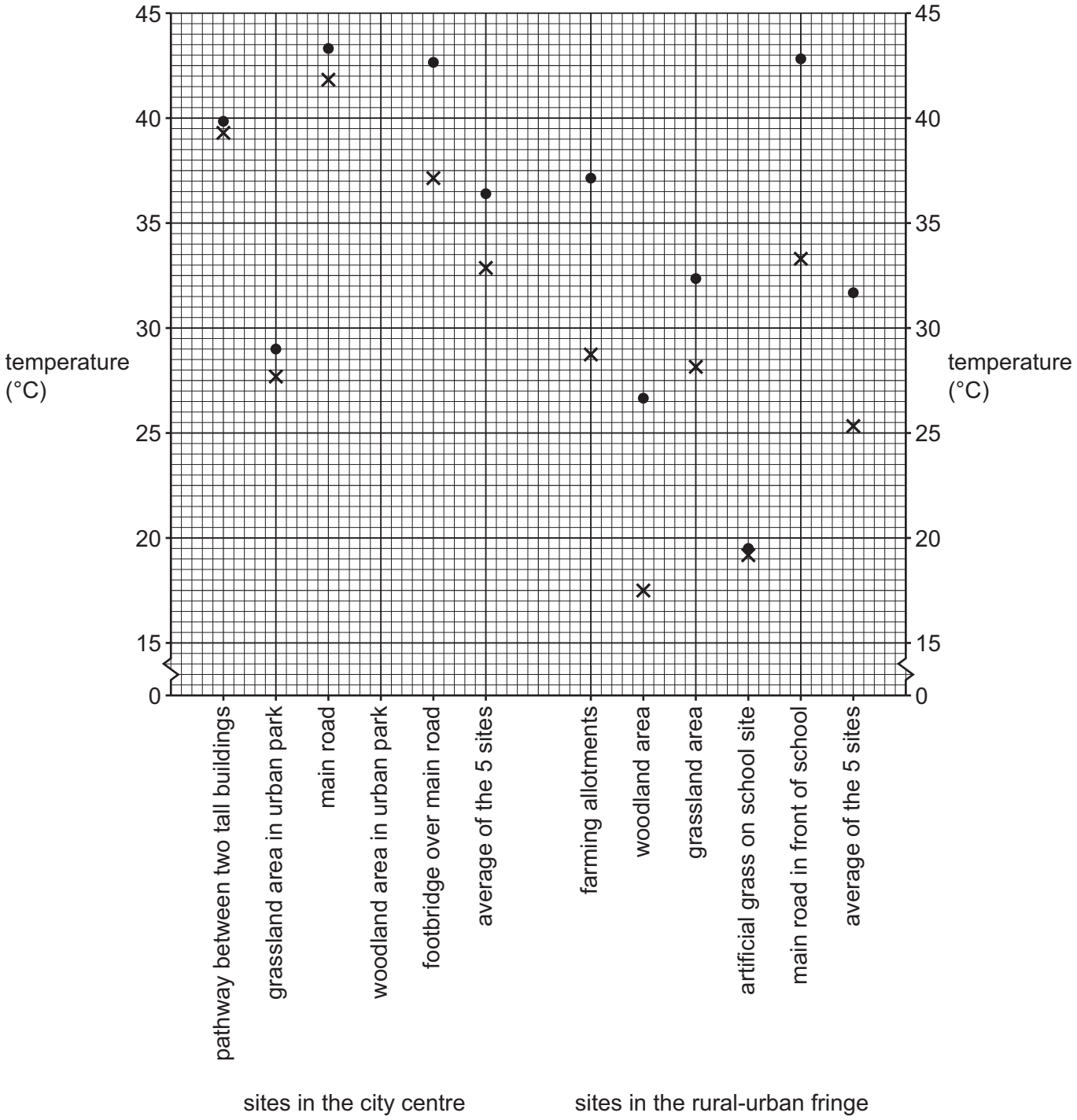
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(c) The students measured the temperature in the morning and afternoon at each of the 10 sites. Their results are shown in Table 1.1 (Insert).

(i) Use the results in Table 1.1 to **complete Fig. 1.2** by plotting the morning and afternoon temperatures at the site in the woodland area in the urban park. [2]

Temperatures at the 10 sites



Key

× morning temperature

● afternoon temperature

Fig. 1.2

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(ii) What conclusion would the students make about **Hypothesis 1:** *Temperatures are higher in the city centre than in the rural-urban fringe*? Support your answer with evidence from Fig. 1.2 and Table 1.1.

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(iii) Suggest **two** reasons why temperatures vary between the city centre and the rural-urban fringe.

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[2]

(d) To investigate **Hypothesis 2:** ***Average*** *wind speeds are higher in the city centre than in the rural-urban fringe*, the students measured the wind speed at the 10 sites. They used the measuring instrument shown in Fig. 1.3 (Insert).

(i) What is the name of the instrument used to measure **wind speed**? Tick (✓) your choice.

	tick (✓)
anemometer	
barometer	
hygrometer	

[1]

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(ii) The students' results are shown in Table 1.2 (Insert). Use these results to **plot on Fig. 1.4** the morning wind speed at the site on the footbridge over the main road. [1]

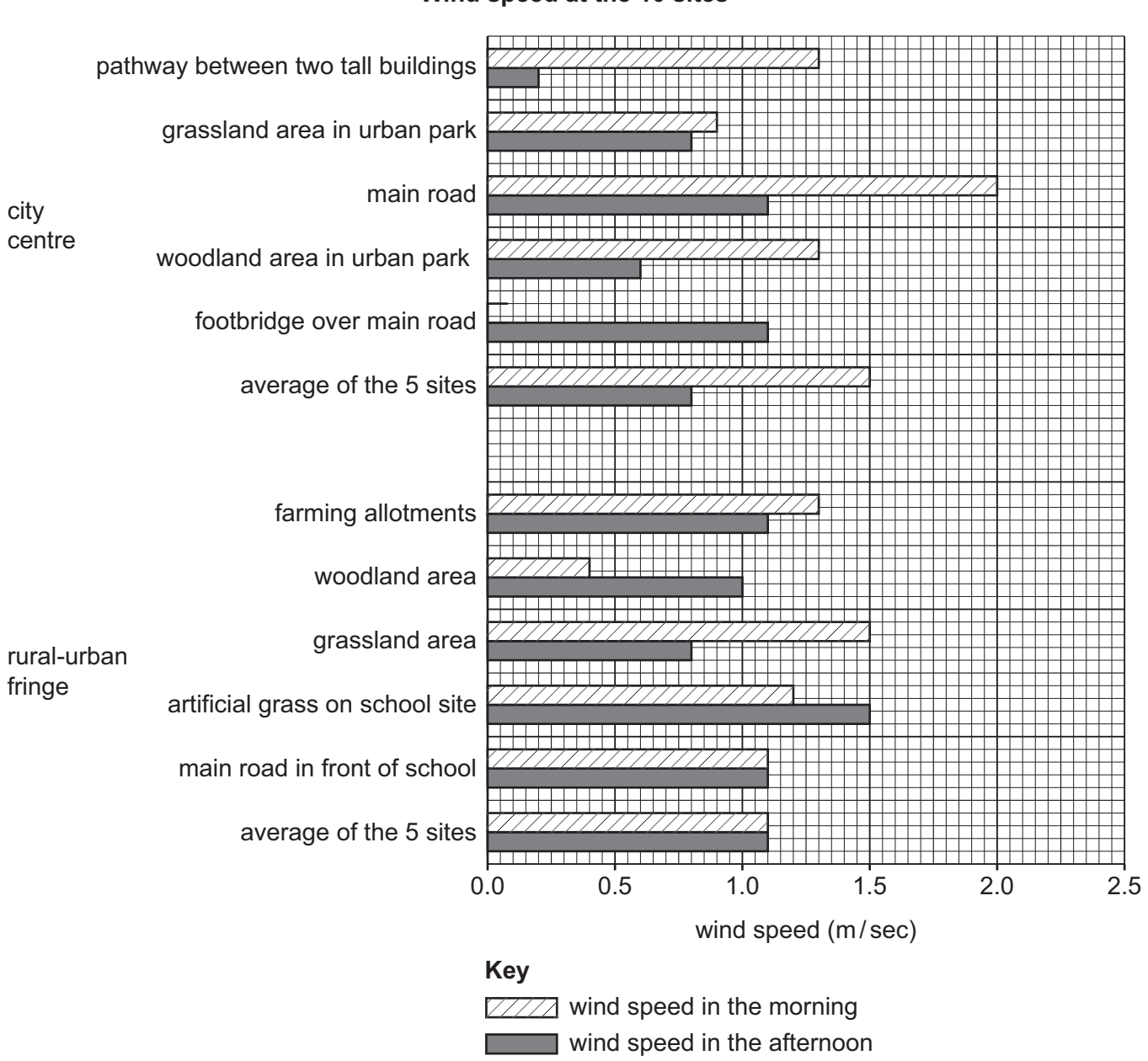


Fig. 1.4

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(iii) Which **one** of the following conclusions about **Hypothesis 2:** ***Average*** *wind speeds are higher in the city centre than in the rural-urban fringe* is correct? Tick (✓) your decision in the table. Support your decision with evidence from Fig. 1.4 and Table 1.2.

	tick (✓)
The hypothesis is true.	
The hypothesis is partly true.	
The hypothesis is false.	

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..... [3]

(iv) Which **two** of the following affect wind speed in an urban area? Tick (✓) your choices.

	tick (✓)
high density of roads and road junctions	
temperature of the ground	
lines of trees and woodland	
gaps between high buildings	
ground saturated by heavy rain	

[2]

(e) While measuring the wind speed at different sites, the students realised that the wind was blowing from different directions. Fig. 1.5 (Insert) shows a simple wind vane which measures wind direction, and Fig. 1.6 (Insert) shows a person using the wind vane.

Describe how the person is using the wind vane.

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(f) When they had completed their fieldwork, the students discussed how they might have improved it. Explain how the following suggestions may help to make the results more reliable.

(i) Use the measuring equipment at school before beginning the actual fieldwork.

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(ii) Go back to the fieldwork sites on different days of the year to measure the temperatures and wind speed.

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(iii) Look again at their results, shown in Tables 1.1 and 1.2 (Insert), and consider replacing some measuring sites with different ones.

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2 Students investigated differences in the health of families in Mumbai, a city in India (an LEDC). They went to two areas of the city, a squatter settlement shown in Fig. 2.1 (Insert) and an area of permanent housing shown in Fig. 2.2 (Insert).

(a) Suggest **two** likely risks to the health of people living in the squatter settlement shown in Fig. 2.1.

1 .....

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2 .....

..... [2]

The students wanted to find out if the following hypotheses were correct:

Hypothesis 1: *More people suffer from disease in the squatter settlement than in the area of permanent housing.*

Hypothesis 2: *Most residents in both the squatter settlement and the area of permanent housing use health facilities provided by the government.*

(b) To investigate the two hypotheses, the students used a questionnaire with a sample of 100 residents in each area.

(i) Why did the students need to use a sample of people?

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(ii) Information which the students collected using a questionnaire is known as 'primary data'. What does 'primary data' mean?

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..... [1]

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(iii) The following is an **unreliable** sampling method which may have been used to select people to answer the questionnaire.

'Give the questionnaire to all mothers waiting outside the local school.'

Explain why this is an unreliable method to obtain a sample of people.

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..... [3]

(iv) Name and describe a **reliable** sampling method which the students could use to select people to answer the questionnaire. Explain why this would be a reliable method to use.

name of method .....

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(c) The questionnaire is shown in Fig. 2.3 (Insert). The results of question 1 in the questionnaire are shown in Table 2.1 (Insert).

(i) **Plot the result** for the number of people who suffered from typhoid in the squatter settlement on Fig. 2.4. [1]

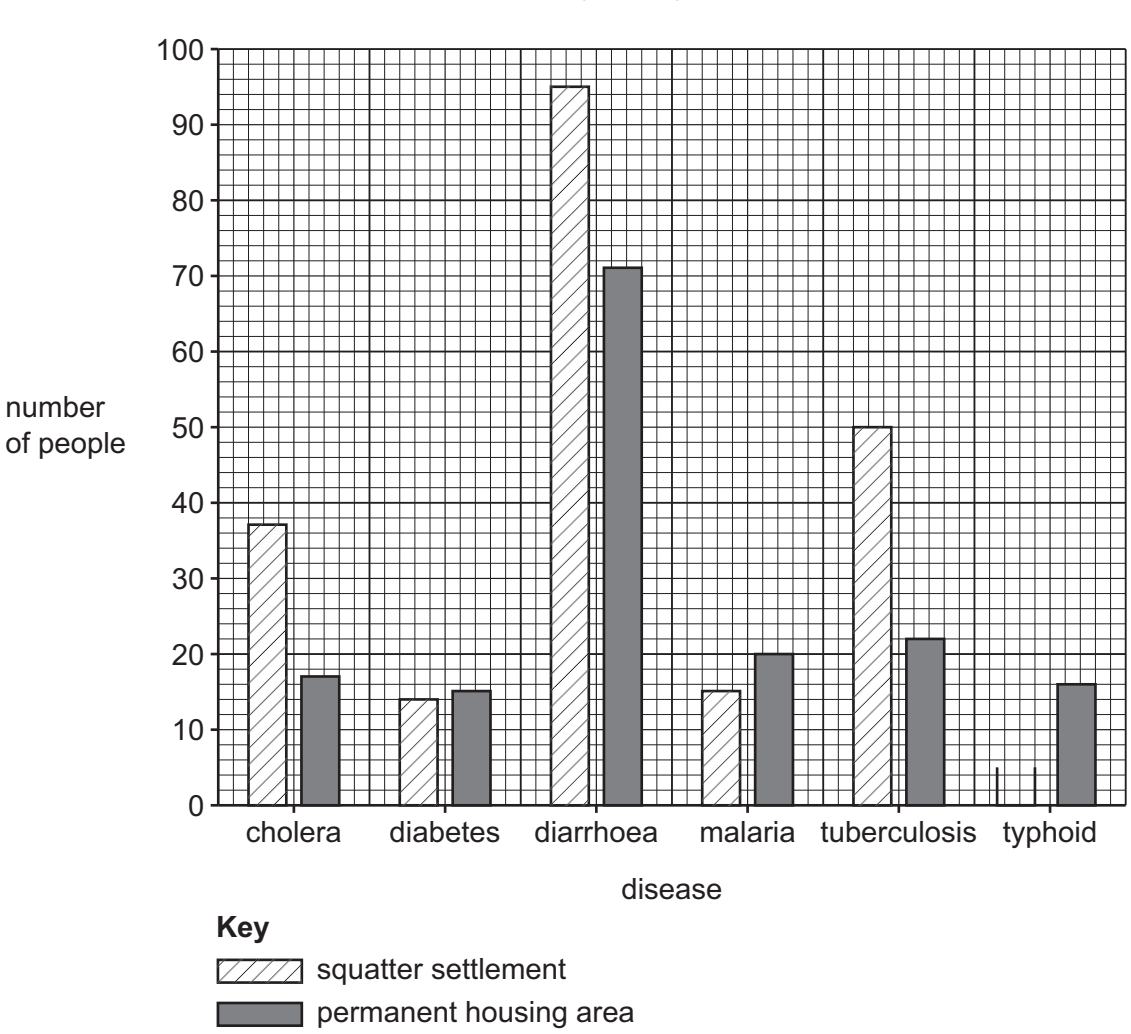


Fig. 2.4

(ii) What conclusion would the students make about **Hypothesis 1:** *More people suffer from disease in the squatter settlement than in the area of permanent housing*? What evidence in Fig. 2.4 and Table 2.1 supports their conclusion?

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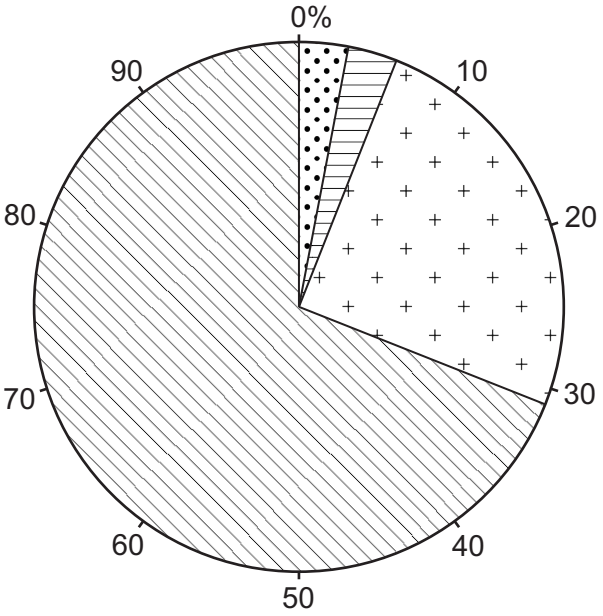
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(d) The results of question 2 in the questionnaire are shown in Table 2.2 (Insert).

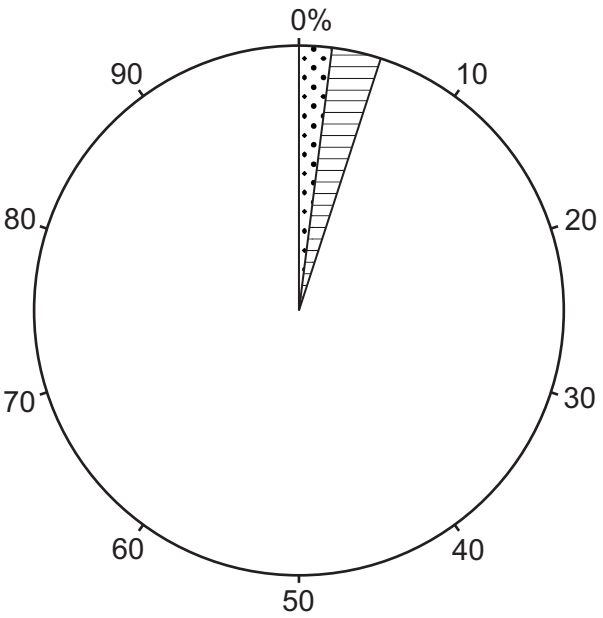
(i) Use the results to **complete the pie graph** for the **permanent housing area** in Fig. 2.5. [2]

Where people go for treatment of an illness or disease

people in squatter settlement (%)



people in permanent housing area (%)



Key

- clinic or hospital run by a charity or NGO
- family or friends
- government doctor, clinic or hospital
- private doctor or clinic

Fig. 2.5

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(ii) The students made the conclusion that **Hypothesis 2:** *Most residents in both the squatter settlement and the area of permanent housing use health facilities provided by the government* was **false**. Support this decision with evidence from Fig. 2.5 and Table 2.2.

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..... [3]

(e) The students were surprised by their conclusion to **Hypothesis 2**. So they returned to the two areas of the city and asked people, 'What is the main reason you chose **not** to use health facilities provided by the government?'

(i) The answers people gave are shown in Table 2.3 (Insert). **Complete Fig. 2.6** to show the answers given by people in the permanent housing area. [2]

The main reason people chose not to use the government health facilities

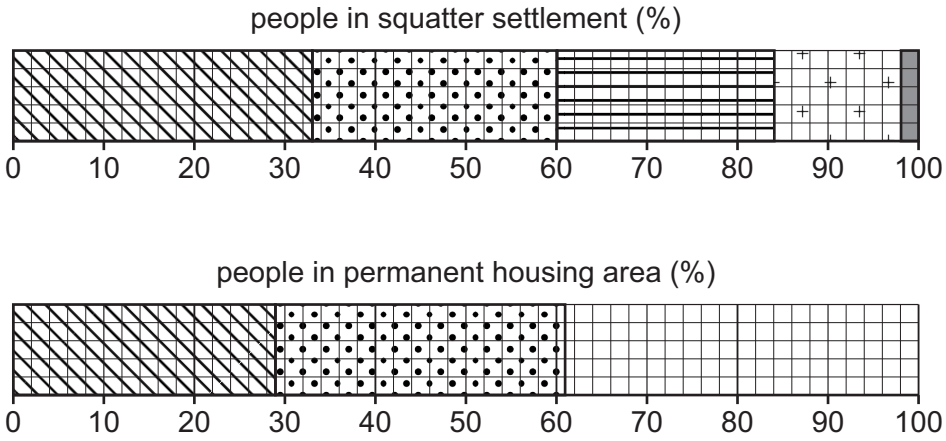


Fig. 2.6

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(ii) Describe **two** differences between the answers given by the people in the two areas. Do **not** use statistics in your answer.

1 .....

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2 .....

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[2]

(f) Suggest how the health of residents in poor areas of the city could be improved.

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..... [3]

(g) The students wanted to extend their study by comparing housing conditions in the two areas. Describe how they could do some fieldwork to collect information about housing conditions. Do **not** include a questionnaire in your answer.

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[Total: 30]

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