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Cambridge Assessment International Education

Cambridge IGCSE™

CANDIDATE NAME									
CENTRE NUMBER						CANDIDATE NUMBER				

4357521538

GEOGRAPHY **0460/42**

Paper 4 Alternative to Coursework **May/June 2021**

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.

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

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1 A student who was studying weather did fieldwork to measure and record rainfall at her school. To extend her fieldwork she decided to compare her results with data from a weather station at the local university about 50 km away from the school.

The student decided to investigate the following hypotheses:

Hypothesis 1: *At the school rainfall is higher on days when the wind is blowing from the west.*

Hypothesis 2: *Rainfall is higher at the school than at the university.*

(a) To investigate the hypotheses the student used a rain gauge.

(i) Which **two** of the following locations should be chosen when deciding where to put a rain gauge? Tick (✓) your choices below. [2]

location	tick (✓)
away from trees to reduce interception by leaves	
on concrete to collect any rain splashing up from the ground	
on a hillside which is facing the direction in which the wind is blowing rain	
next to a main road so it is easy to get to the rain gauge	
remote from people or animals which may interfere with the rain gauge	

(ii) In the space below, **draw a labelled diagram** of a rain gauge. [4]

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(iii) The student used a wind vane to record the wind direction. This was fixed to the roof of the school. Fig. 1.1 (Insert) is a diagram of a wind vane.

Complete the sentences below to explain how a wind vane is used.

The letters (N, E, S, W) show .....

.....

The pointer (arrow) shows .....

.....

The wind vane is located on the roof so that .....

..... [3]

(b) The student's measurements for each day are shown in Table 1.1 (Insert).

(i) Use the data from Table 1.1 to **plot the rainfall measurements for days 3 and 16** on Fig. 1.2 below. [2]

Daily rainfall measurements when wind is coming from different directions

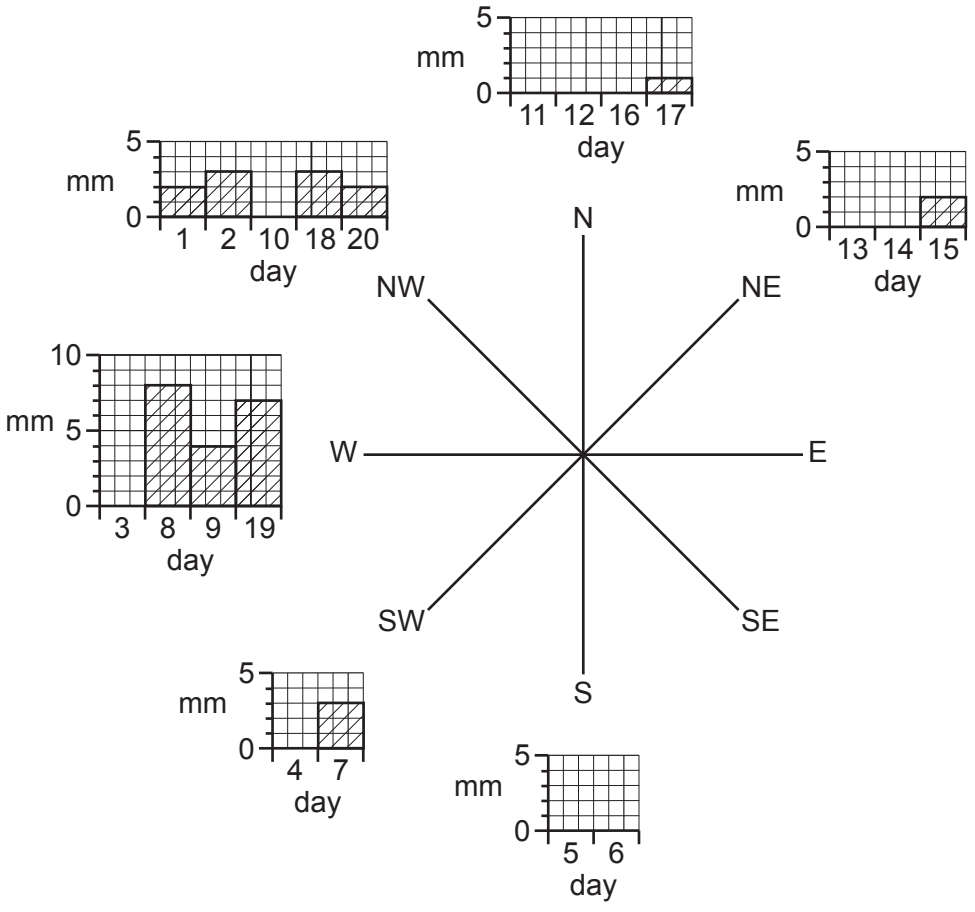

Fig. 1.2

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(ii) Do the fieldwork results support **Hypothesis 1:** *At the school rainfall is higher on days when the wind is blowing from the west*? Support your conclusion with data from Fig. 1.2 and Table 1.1.

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..... [3]

(c) To investigate **Hypothesis 2:** *Rainfall is higher at the school than at the university*, the student used secondary data from an automated weather recording station at the university.

(i) How is primary data different from secondary data?

.....

.....

.....

..... [2]

(ii) Give **two** advantages of using electronic recording instruments at an automated weather recording station.

1 .....

.....

2 .....

..... [2]

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(iii) To compare the rainfall amounts at the school and the university, the student plotted both sets of rainfall data onto the graph, shown in Fig. 1.3, below.

Complete Fig. 1.3 by plotting the following information. [2]

rainfall on one day at the university	4.0 mm
average daily rainfall at the university	3.2 mm

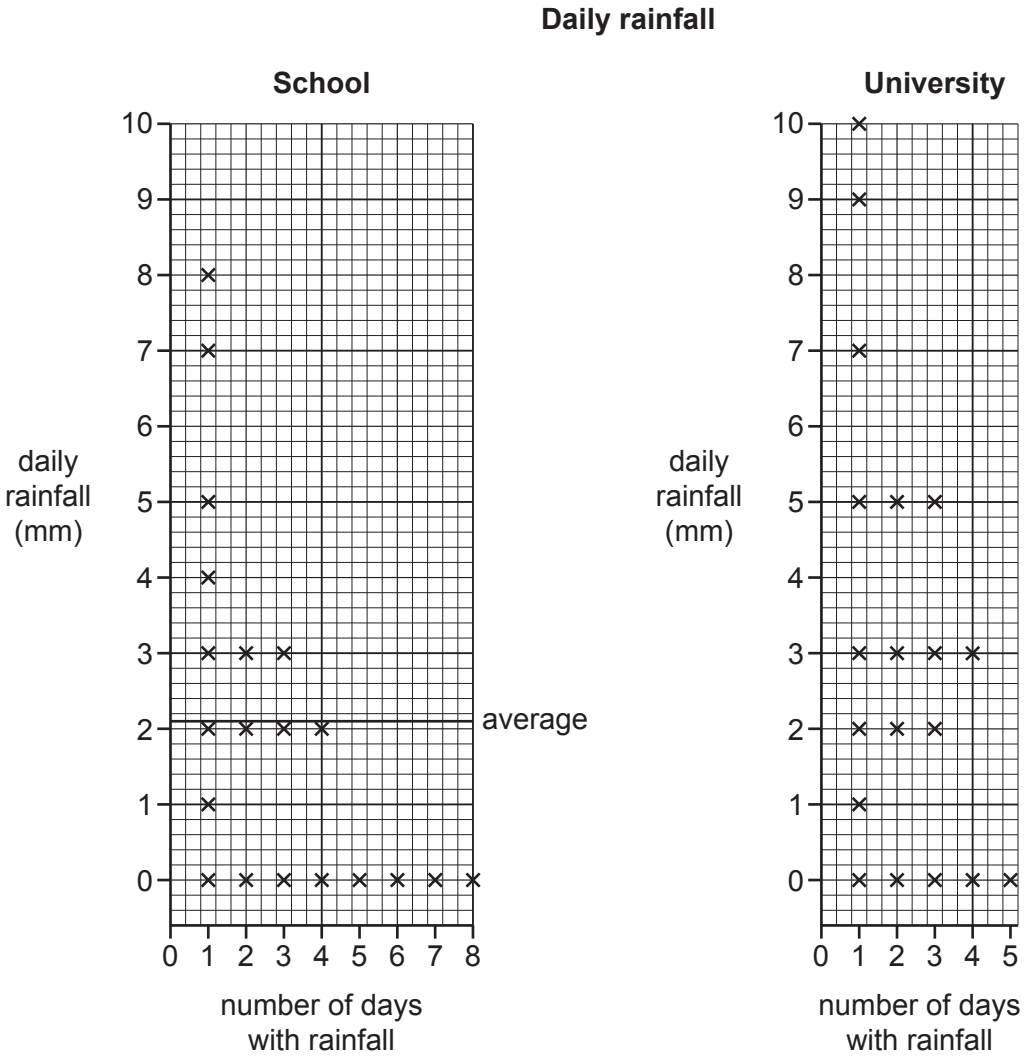

Fig. 1.3

(iv) What conclusion would the student make about **Hypothesis 2:** *Rainfall is higher at the school than at the university*? Support your answer with evidence from Fig. 1.3.

.....

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..... [3]

(d) Whilst doing her fieldwork the student realised that there was more cloud cover on days when it rained more.

(i) Which **one** of the following units of measurement is used to show cloud cover? Tick (✓) your choice below.

unit of measurement	tick (✓)
degrees	
millibars	
millimetres	
oktas	

[1]

(ii) The student observed three different types of cloud.
Use arrows to match the types of cloud with the correct description in the table below.

type of cloud	description
cirrus	Low altitude grey clouds which occur in layers; rainfall is usually light and is described as ‘drizzle’.
cumulus	High altitude white clouds which appear ‘wispy’ or look like feathers; no rain falls.
stratus	Low altitude clouds which are separate from each other and appear ‘fluffy’ or look like cotton wool; rain showers may occur.

[2]

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(e) To extend her fieldwork the student used a sunshine recorder to measure the amount of sunlight on each day. Fig. 1.4 (Insert) shows a sunshine recorder. Describe how a sunshine recorder is used.

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..... [4]

[Total: 30]

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2 Students from an international school in Singapore, a country in Southeast Asia, were studying tourism. Tourism is an important industry in Singapore and contributes about 10% of the country's wealth.

(a) Fig. 2.1 (Insert) shows the change in the number of tourists who visited Singapore between 2002 and 2017.

(i) How many tourists visited Singapore in 2015?

..... million [1]

(ii) Fig. 2.1 shows the impact of two global events on the number of tourists to Singapore. How did these events affect tourist numbers? Include statistics in your answer.

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..... [3]

(iii) Suggest **two** disadvantages for local people of many tourists going to Singapore.

1 .....

.....

2 .....

..... [2]

(b) Singapore has many tourist attractions. Some of these are shown in Fig. 2.2 (Insert).

(i) Which **one** of the following best describes the Raffles Hotel? Tick (✓) your choice. [1]

type of attraction	tick (✓)
cultural	
man-made	
natural vegetation	
physical landscape	

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(ii) Describe the distribution of the tourist attractions shown in Fig. 2.2.

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..... [2]

(c) The students produced a questionnaire for visitors to complete in order to test some hypotheses. The questionnaire is shown in Fig. 2.3 (Insert).

(i) Why did the students first ask if the person was a visitor to Singapore?

.....

.....

.....

..... [2]

(ii) The students went to different tourist attractions to use their questionnaire.
Fig. 2.4, below, is an extract from one student's fieldwork diary, which describes his method for selecting people to survey.

<u>Sampling method</u>
The survey was done by systematic sampling.

<u>Description of the method</u>
I approached any person who walked past me and asked them to complete my questionnaire.

Fig. 2.4

What is wrong with the student's description of his method? How should he have described his method?

.....

.....

.....

..... [2]

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[Turn over

(iii) In class the students agreed on four hypotheses to test. These are shown in the table below. From their questionnaire in Fig. 2.3 (Insert), choose the questions which provide correct information for the hypotheses and **write the question numbers in the table** below.

hypothesis	question(s) to provide information
Most visitors to Singapore are over the age of 50.	.....
Shopping is the main reason why people come to Singapore.	.....
Most visitors stop in Singapore on their journey to another destination.	.....
There is a positive relationship between the distance people travel to Singapore and the length of their visit.	..... and .....

[2]

One student chose to test the following hypotheses:

Hypothesis 1: *Shopping is the main reason why people visit Singapore.*

Hypothesis 2: *There is a positive relationship between the distance people travel to Singapore and the length of their visit.*

(d) The reasons people gave for visiting Singapore are shown in Table 2.1 (Insert).

(i) Use these results to **complete the pie graph** in Fig. 2.5 below. [2]

Main reasons for visiting Singapore

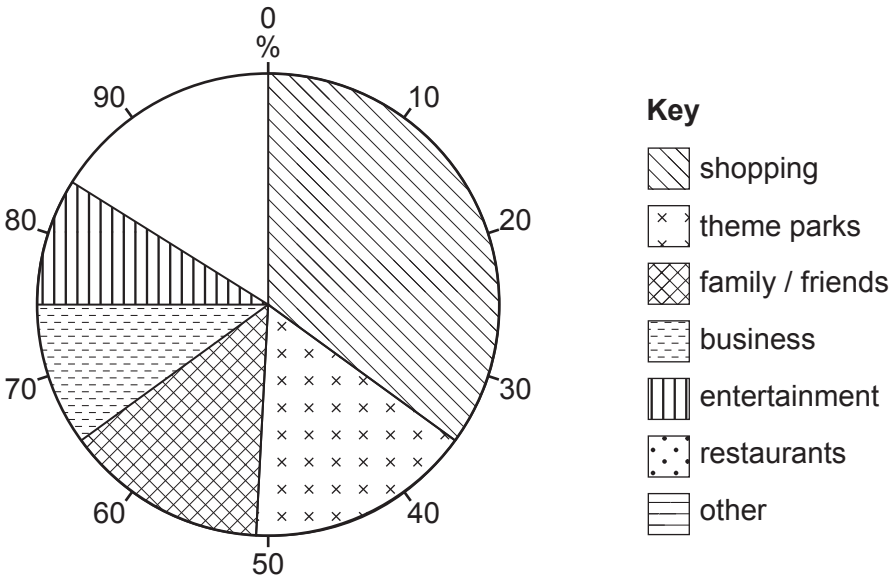

Fig. 2.5

(ii) What conclusion would the students make about **Hypothesis 1:** *Shopping is the main reason why people visit Singapore*? Support your decision with evidence from Fig. 2.5 and Table 2.1 (Insert).

.....

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.....

..... [2]

(e) To investigate **Hypothesis 2:** *There is a positive relationship between the distance people travel to Singapore and the length of their visit*, the students plotted their results on a scatter graph, Fig. 2.6, below.

(i) **Plot the following information** from two visitors on Fig. 2.6. [2]

distance travelled (km)	length of visit (days)
4000	7
1100	8

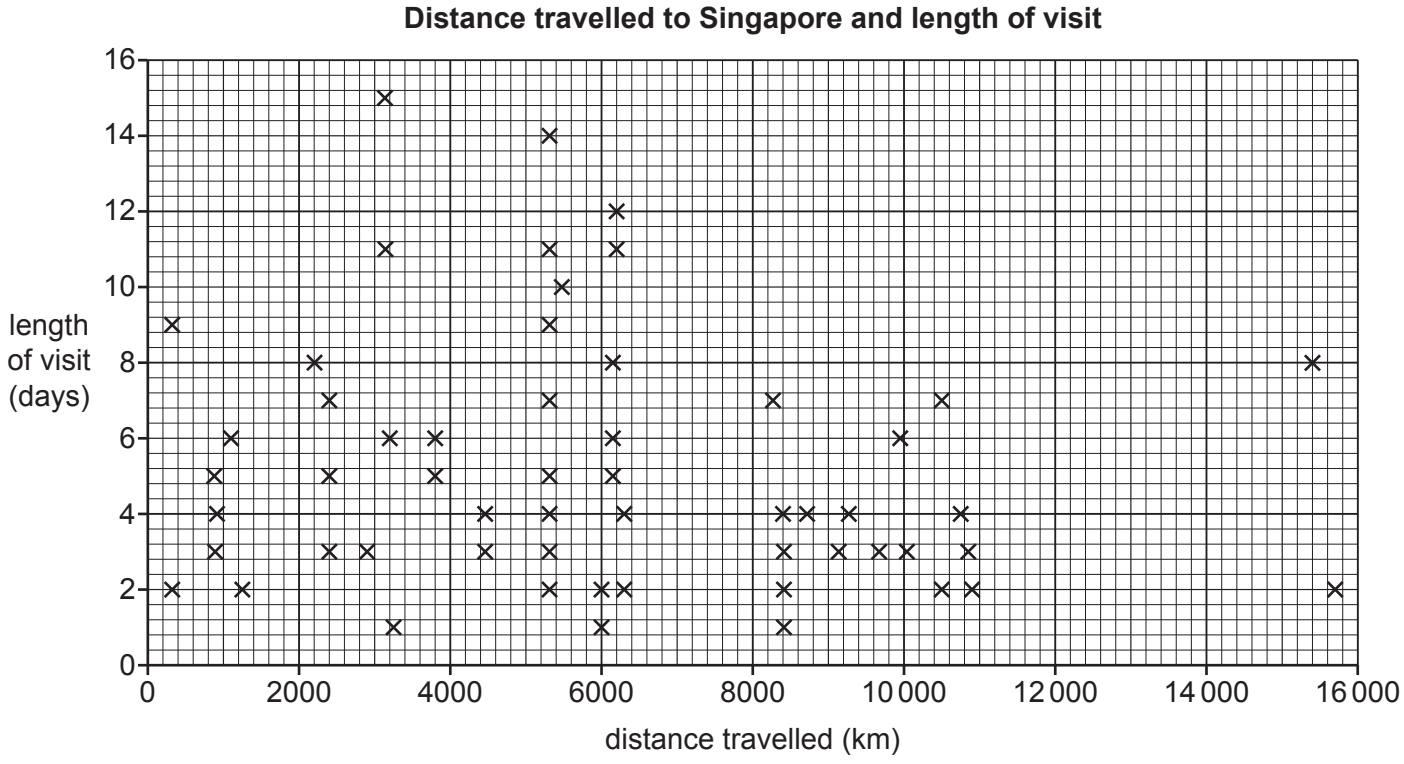

Fig. 2.6

(ii) Do the results support **Hypothesis 2:** *There is a positive relationship between the distance people travel to Singapore and the length of their visit*? Support your conclusion with evidence from Fig. 2.6.

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..... [3]

(f) The students used the results of Question 3 in the questionnaire 'Which city / airport did you travel from?' to work out the number of visitors coming from different countries. This is shown in Table 2.2 (Insert).

(i) Use these results to **show the number of visitors coming from South Africa and Australia** on Fig. 2.7 below. [2]

Where visitors to Singapore came from

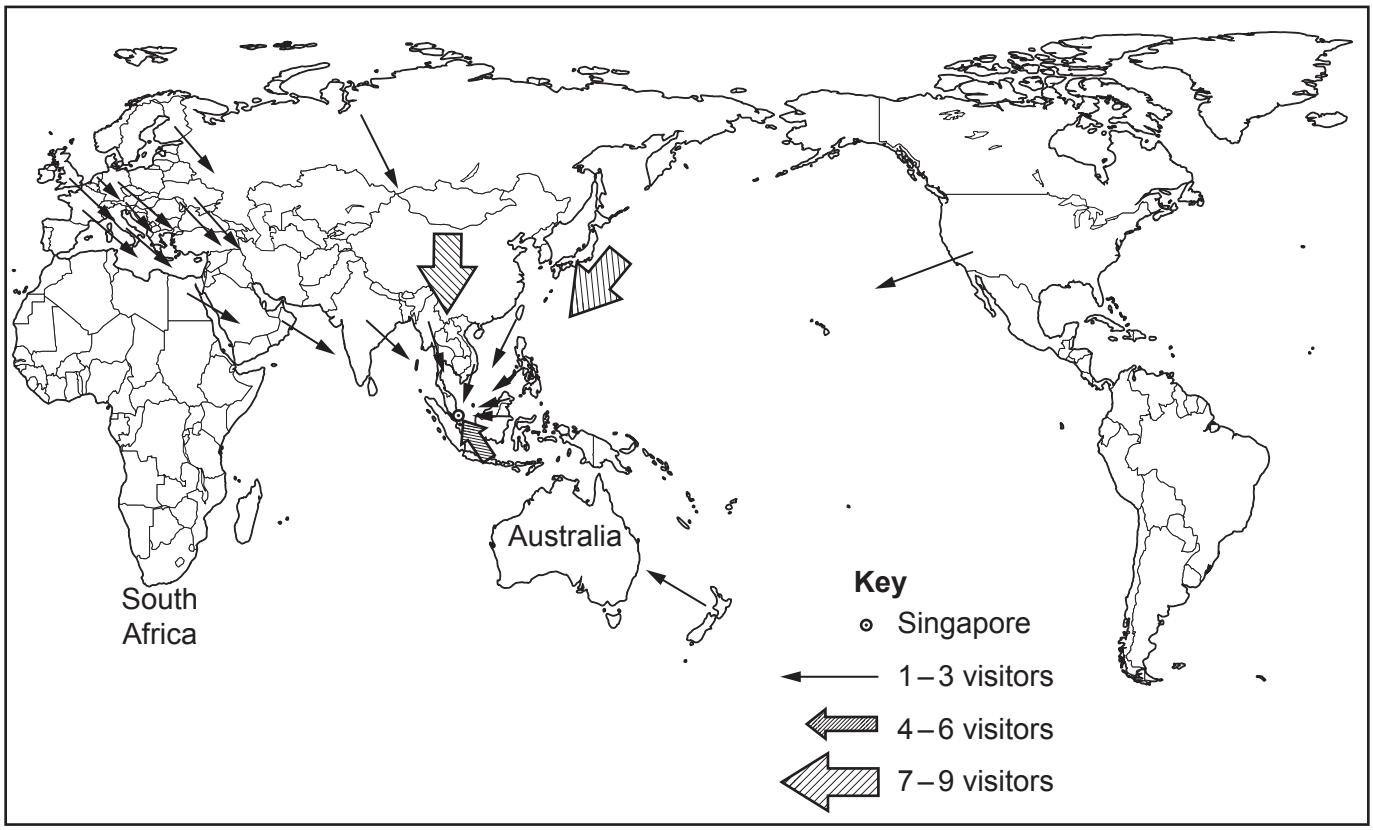

Fig. 2.7

(ii) Which continent did most visitors come from?

..... [1]

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(g) When the students checked the completed questionnaire survey sheets, they found three errors.
The survey sheets are shown in Figs. 2.8, 2.9 and 2.10 (Insert). Identify the different error on each survey sheet.

Fig. 2.8

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Fig. 2.9

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Fig. 2.10

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..... [3]

[Total: 30]

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Additional Pages

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

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