Cambridge
O Level

Cambridge International Examinations
Cambridge Ordinary Level

CANDIDATE NAME	
CENTRE NUMBER	
CANDIDATE NUMBER	

7922289971 2

GEOGRAPHY **2217/22**

Paper 2 **May/June 2015**

2 hours 15 minutes

Candidates answer on the Question Paper.

Additional Materials: Ruler
Calculator
Protractor
Plain paper

1:50 000 Survey Map Extract is enclosed with this question paper.

READ THESE INSTRUCTIONS FIRST

Write your Centre number, candidate number and name in the spaces provided.
Write in dark blue or black pen.
You may use an HB pencil for any diagrams or graphs.
Do not use staples, paper clips, glue or correction fluid.
DO **NOT** WRITE IN ANY BARCODES.

Section A
Answer **all** questions.
Section B
Answer **one** question.

The Insert contains Photograph A for Question 2, Figs 8 and 10 and Tables 1 and 2 for Question 7, and Figs 12 and 13, Table 4 and Photograph B for Question 8.
The Survey Map Extract and the Insert are **not** required by the Examiner.
Sketch maps and diagrams should be drawn whenever they serve to illustrate an answer.

At the end of the examination, fasten all your work securely together.
The number of marks is given in brackets [ ] at the end of each question or part question.

This document consists of **25** printed pages, **3** blank pages and **1** Insert.

CAMBRIDGE
International Examinations

Section A

Answer **all** questions in this section.

1 (a) The 1:50 000 map is of Springfield, Jamaica.

Study Fig. 1, which shows the position of some features in the west of the map extract.

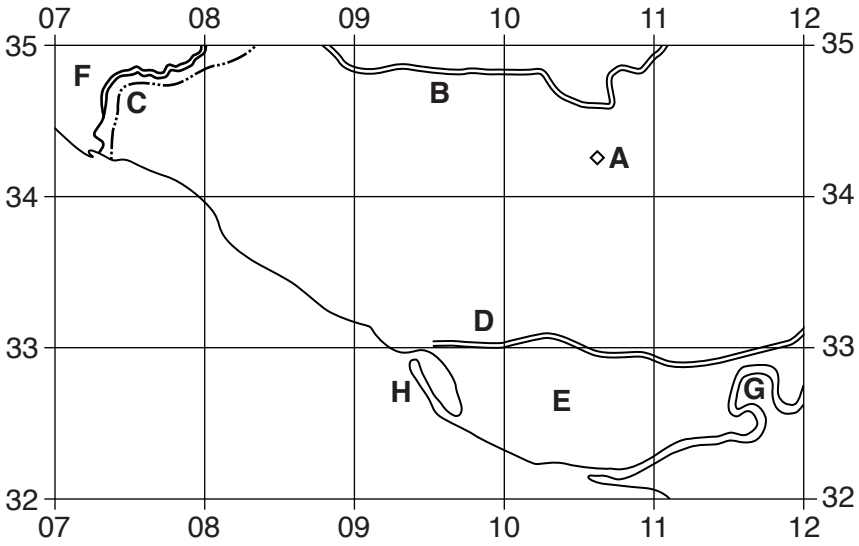

Fig. 1

Using the map extract, identify the features shown on Fig. 1:

(i) feature **A**; ..... [1]

(ii) the type of road at **B**; ..... [1]

(iii) the type of boundary at **C**; ..... [1]

(iv) the settlement pattern at **D**; ..... [1]

(v) the coastal vegetation at **E**; ..... [1]

(vi) the coastal vegetation at **F**; ..... [1]

(vii) river feature **G**; ..... [1]

(viii) coastal feature **H**. ..... [1]

(b) On Fig. 1, draw the 280 m contour on Round Hill. [2]

(c) **(i)** Measure the length of the north – south runway at Vernamfield disused aerodrome.

..... metres [1]

(ii) How is the aerodrome land being used?

..... [1]

(d) **(i)** Describe the general direction of flow along the course of the Hilliards River.

.....

.....

..... [2]

(ii) Which of the following is **not** a feature of the Hilliards river in squares 1534 and 1634? Circle the correct answer below.

distributary meander tributary [1]

(e) Give the six figure grid reference of the ford on the road between Cherry Hill and Hopewell.

..... [1]

(f) Using map evidence, suggest reasons for the location of settlement at Kemps Hill in grid squares 1933 and 1934.

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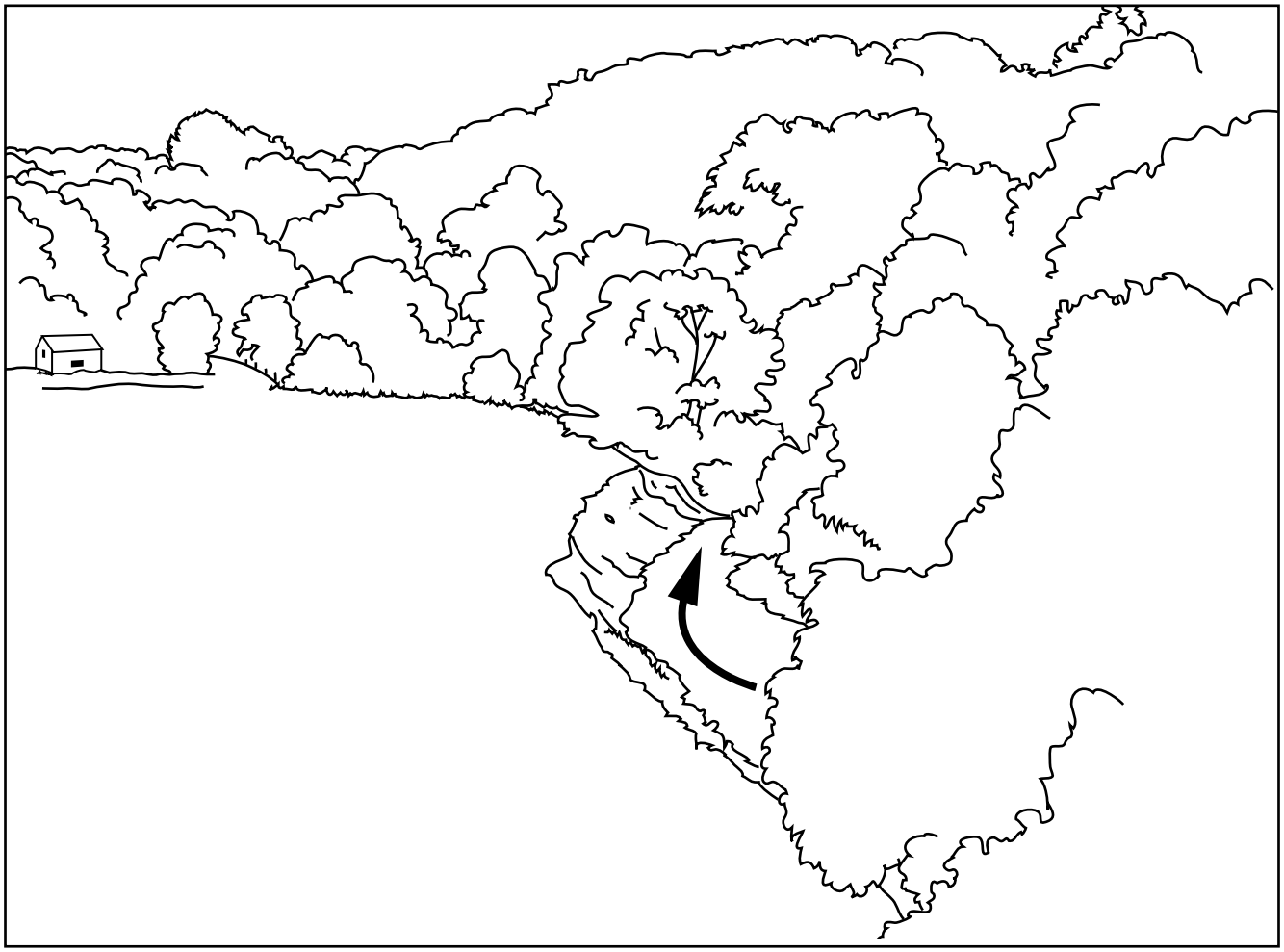
..... [4]

[Total: 20 marks]

2 Study Photograph A (Insert) and Fig. 2, a field sketch of the same location.



Key

direction of river flow

Fig. 2

(a) (i) Use labelled arrows on Fig. 2 to indicate the positions of:

- a river cliff;
- a slip-off slope;
- a floodplain;
- a collapsed riverbank (due to undercutting). [4]

(ii) Further erosion will cause the position of the meander to change. Which of the arrows **A**, **B** or **C** on Photograph A, shows the likely direction of this change?

..... [1]

(b) What evidence indicates that the river is at low flow conditions?

.....

..... [1]

(c) Describe the vegetation shown in Photograph A.

.....

.....

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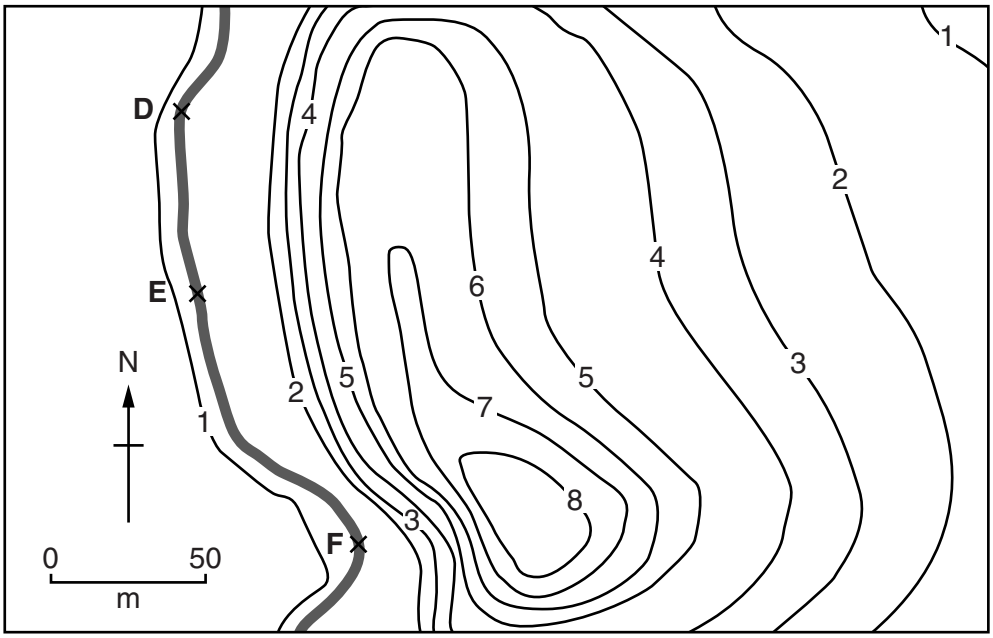
..... [2]

[Total: 8 marks]

3 **(a)** Traffic is a source of air pollution. Name **one** other source of air pollution.

..... [1]

(b) Study Fig. 3, an isoline map, which shows air pollution produced by vehicles along part of a road.



Key

concentration of air pollution

1 low → 8 high

road

4 isoline

Fig. 3

(i) On Fig. 3, shade the zone where air pollution is most concentrated. [1]

(ii) Describe the distribution of the air pollution in relation to the position of the road.

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..... [4]

(c) (i) What was the wind direction on the day the readings were taken? Circle the correct answer below.

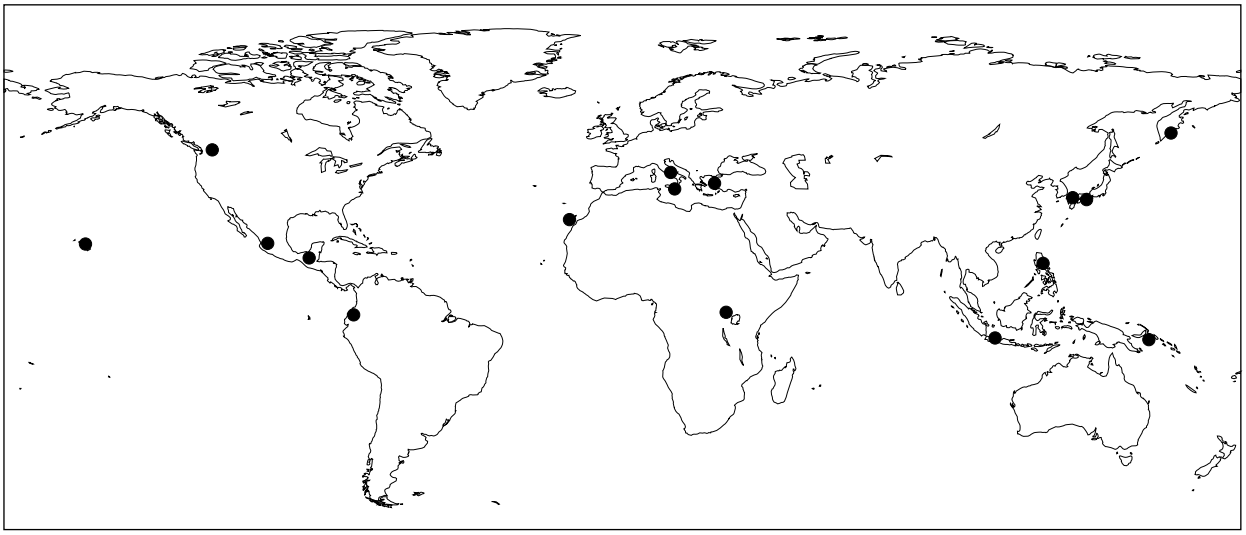
north east south west [1]

(ii) At which location **D**, **E** or **F**, was traffic queuing to pass an obstruction? Circle the correct answer below.

D **E** **F** [1]

[Total: 8 marks]

4 Study Fig. 4, which shows 16 volcanoes which have a history of large eruptions and areas of high population located close to them.



Key

- volcano

Fig. 4

(a) (i) Describe the location of the volcanoes on Fig. 4.

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..... [3]

(ii) Give **one** reason why volcanoes are found at these locations.

.....

..... [1]

(b) (i) Name **two** volcanic hazards that could cause death.

.....

..... [2]

(ii) Suggest **two** reasons why areas of a high population are located close to some volcanoes.

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..... [2]

[Total: 8 marks]

5 Study Fig. 5, which shows types of settlement within an area of the UK.

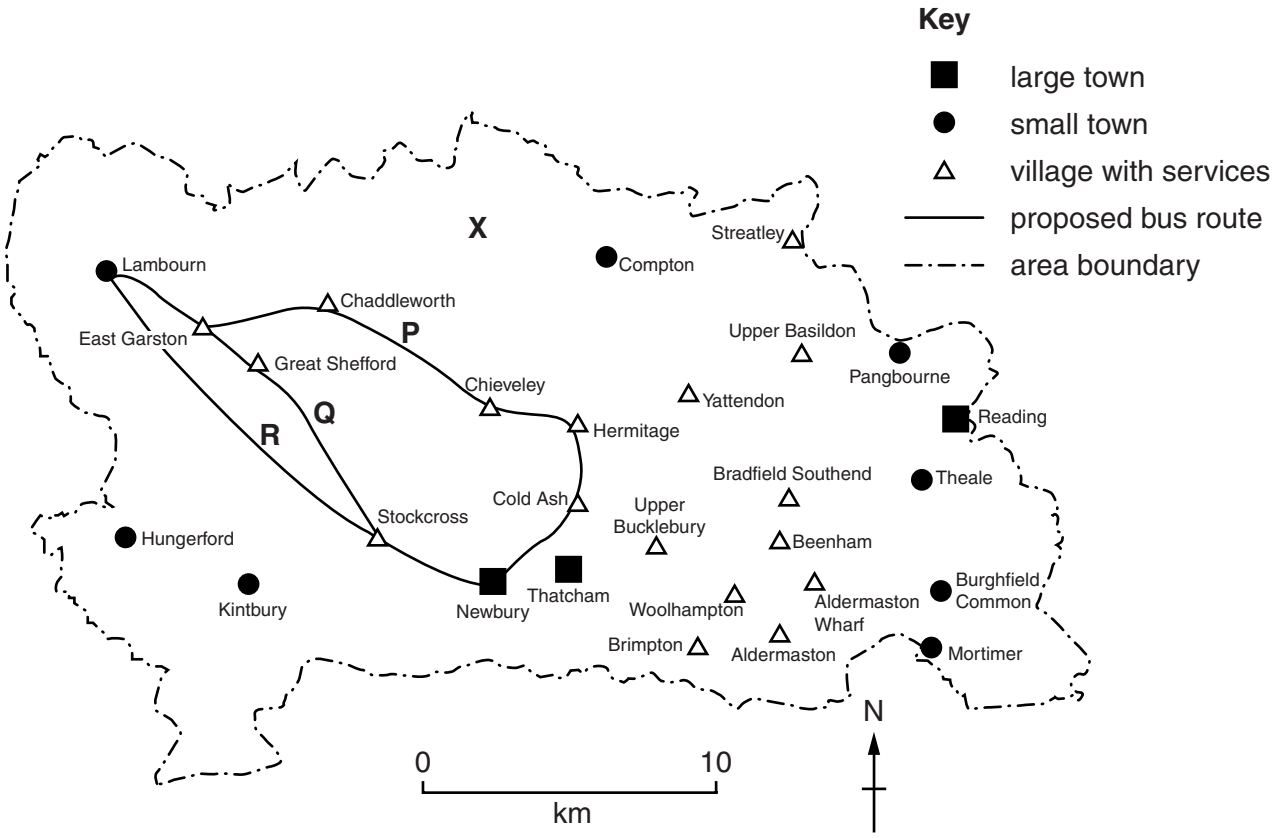

Fig. 5

(a) **(i)** What type of settlement is Yattendon?

..... [1]

(ii) How many small towns are found in the area?

..... [1]

(iii) What type of settlement, other than the types already shown on Fig. 5, might be found at **X** shown on Fig. 5?

.....

..... [1]

(b) There is a proposal for a new bus service from Lambourn to Newbury. Three possible routes, **P**, **Q** and **R**, are shown on Fig. 5.

(i) Which route would people in Great Shefford favour? Give a reason for your answer.

.....

.....

..... [2]

(ii) Suggest why many people in Lambourn would favour route **R**.

.....

..... [2]

(iii) Give **one** advantage of route **P**.

.....

..... [1]

[Total: 8 marks]

6 Study Fig. 6, which shows data for tropical storms in the Atlantic Ocean in 2012.

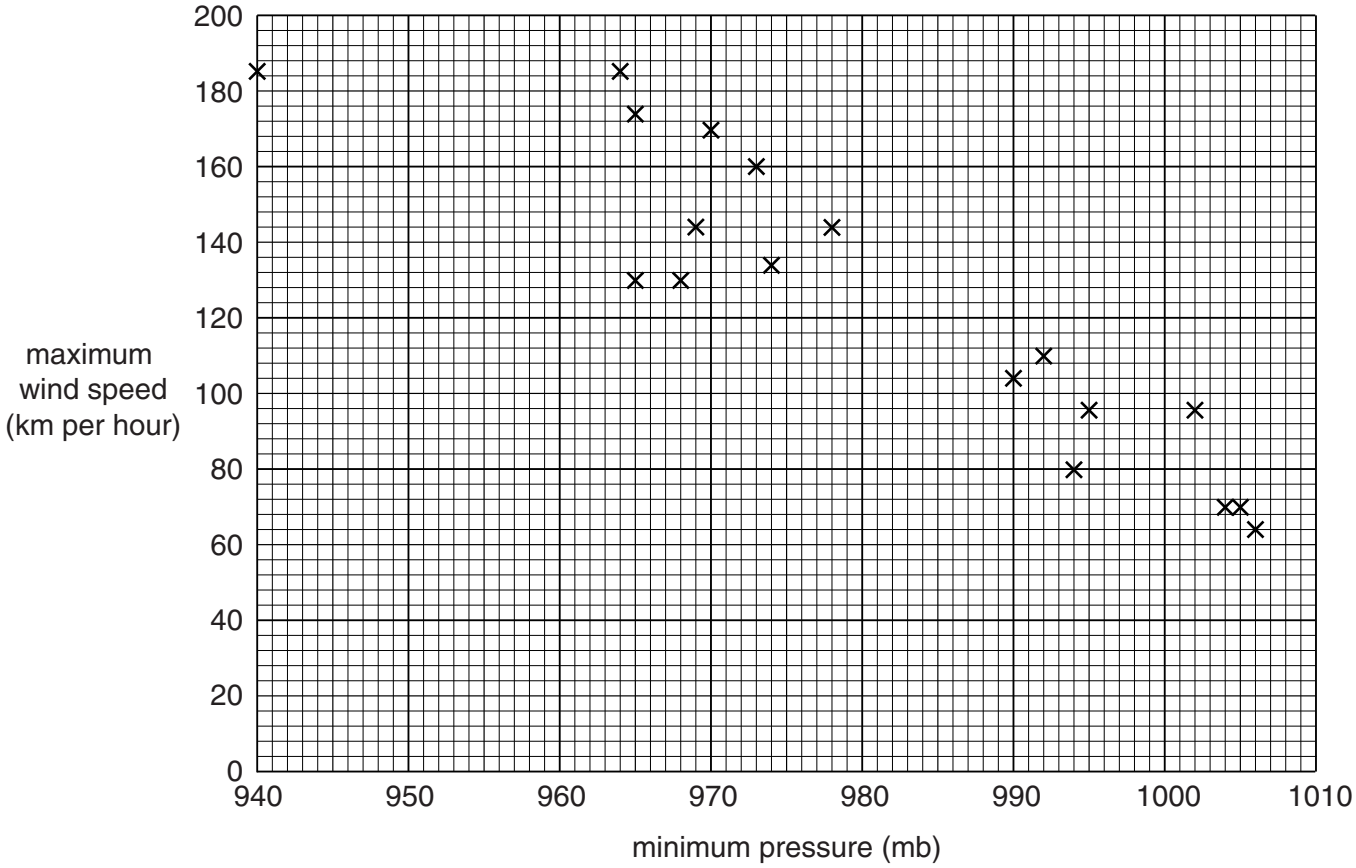

Fig. 6

(a) (i) Complete Fig. 6 by plotting the data for the last storm of 2012, in which the wind speed reached 80 km per hour with a minimum pressure of 1000 mb. [1]

(ii) Draw a best fit line on Fig. 6. [1]

(iii) What type of graph is Fig. 6?

.....

..... [1]

(iv) Describe the relationship shown on Fig. 6.

.....

..... [1]

(b) Six of the storms on Fig. 6 resulted in deaths. For each of these storms, the maximum wind speed and the number of deaths have been plotted on Fig. 7.

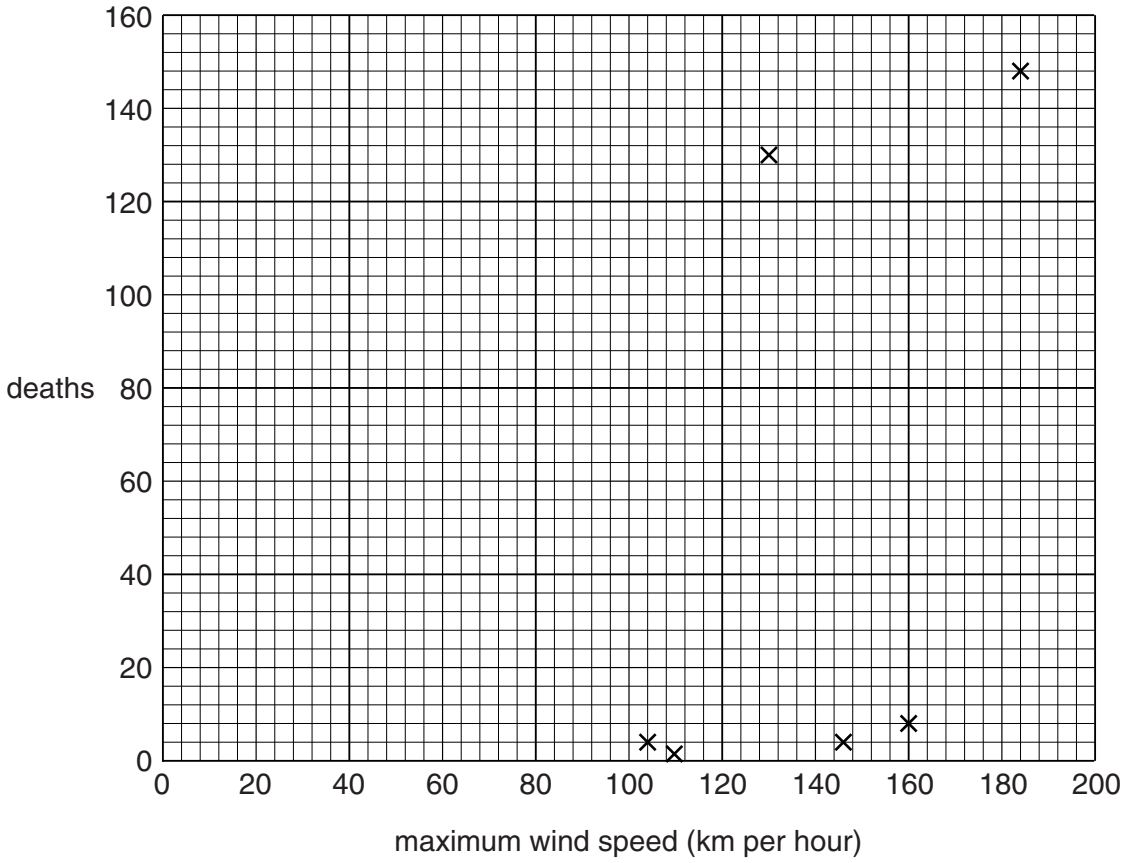

Fig. 7

(i) It can be concluded that there is no relationship between maximum wind speed and the number of deaths. What is the evidence from Fig. 7 for this conclusion?

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..... [1]

(ii) Suggest factors which may influence the number of deaths caused by a tropical storm.

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..... [3]

[Total: 8 marks]

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Section B

Answer **one** question from this section.

7 Students in Mar del Plata, a large tourist resort in Argentina, were interested in the effects of tourism on the city and how these varied between the summer tourist season and winter when there were fewer tourists.

Their two hypotheses were:

Hypothesis 1: *The advantages of tourism are greater than the disadvantages.*

Hypothesis 2: *The amount of traffic is greater in summer than in winter because of tourism.*

(a) The students decided to use a questionnaire to investigate **Hypothesis 1**.
This is shown in Fig. 8 (Insert).

(i) They showed the questionnaire to their teacher who suggested that before they used it with people they should first ask them if they lived in Mar del Plata.

Why do you think the teacher made this suggestion?

.....

.....

.....

.....[2]

(ii) Name and describe **one** sampling method to select 150 residents of Mar del Plata to complete the questionnaire.

Name of sampling method: .....

Description: .....

.....[2]

(iii) Give **two** advantages of sampling.

1 .....

.....

2 .....

.....[2]

(b) The answers to Question 1: *What do you think are the main advantages of tourism in Mar del Plata?* and Question 2: *What do you think are the main disadvantages of tourism in Mar del Plata?* are shown in Table 1 (Insert).

(i) Use the results shown in Table 1 to complete Figs 9A below and 9B opposite. [2]

Residents' answers to Question 1 on the questionnaire

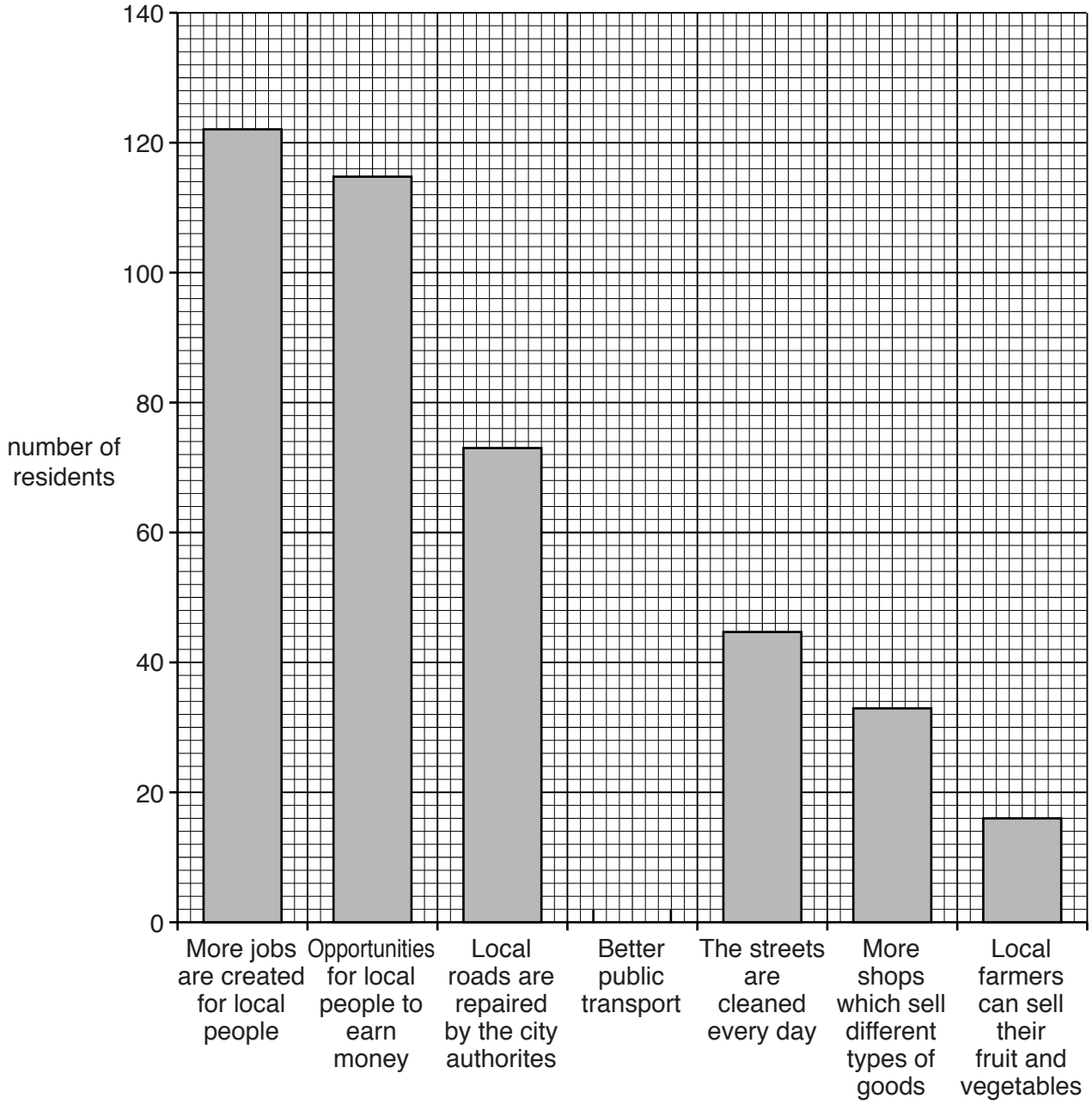

Fig. 9A

Residents' answers to Question 2

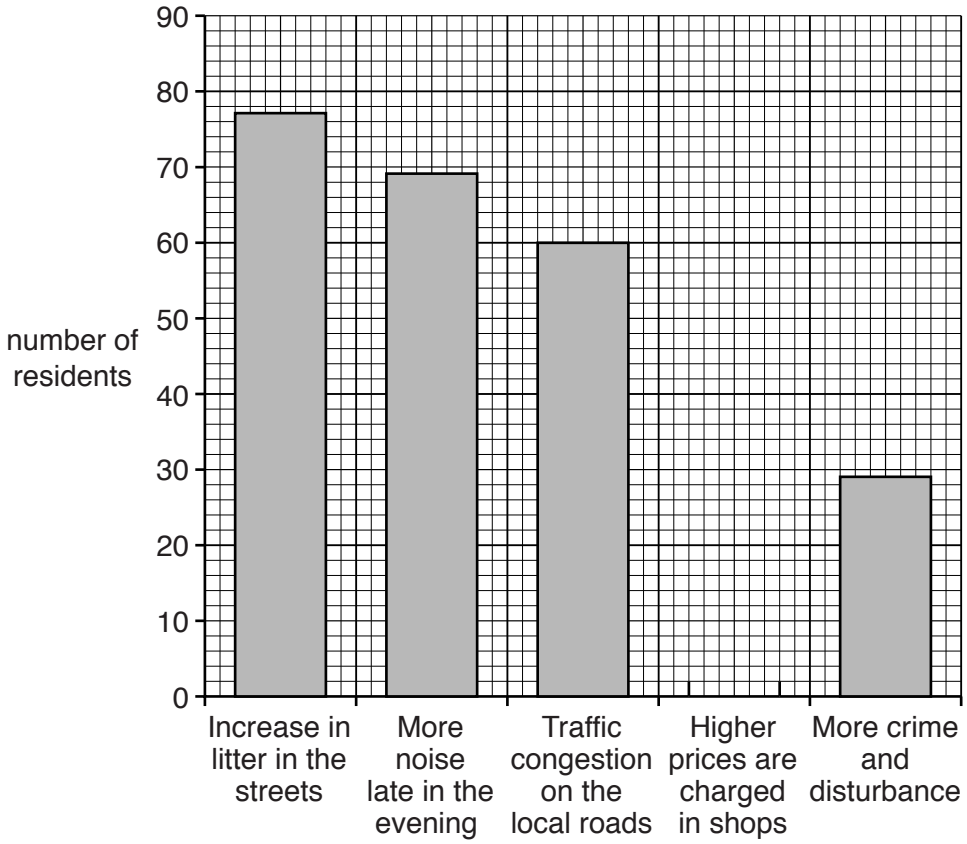

Fig. 9B

(ii) What conclusion can you make about **Hypothesis 1:** *The advantages of tourism are greater than the disadvantages*? Support your decision with evidence from Table 1 and Figs 9A and 9B.

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.....[4]

(iii) Residents of Mar del Plata identified 'More jobs are created for local people' and 'Opportunities for local people to earn money' as the main advantages of tourism.

Explain why these are important for residents.

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.....[4]

(c) Traffic congestion was identified as a disadvantage of tourism. The students then investigated **Hypothesis 2:** *The amount of traffic is greater in summer than in winter because of tourism.*

To investigate the hypothesis the students did a traffic survey at two locations, **X** and **Y**, shown on Fig. 10 (Insert). The students collected their data in summer and used data collected by another group of geography students the previous winter for comparison.

(i) Which **one** of the following describes the data used by these students but not collected by them? Circle your answer. [1]

biased data primary data raw data secondary data

(ii) Suggest **three** ways in which the students could make sure that the traffic survey data which they collected was reliable.

1 .....

.....

2 .....

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3 .....

.....[3]

(iii) The results of the traffic survey are shown in Table 2 (Insert). Use these results to complete Fig. 11A, below. [2]

Traffic survey results at location X

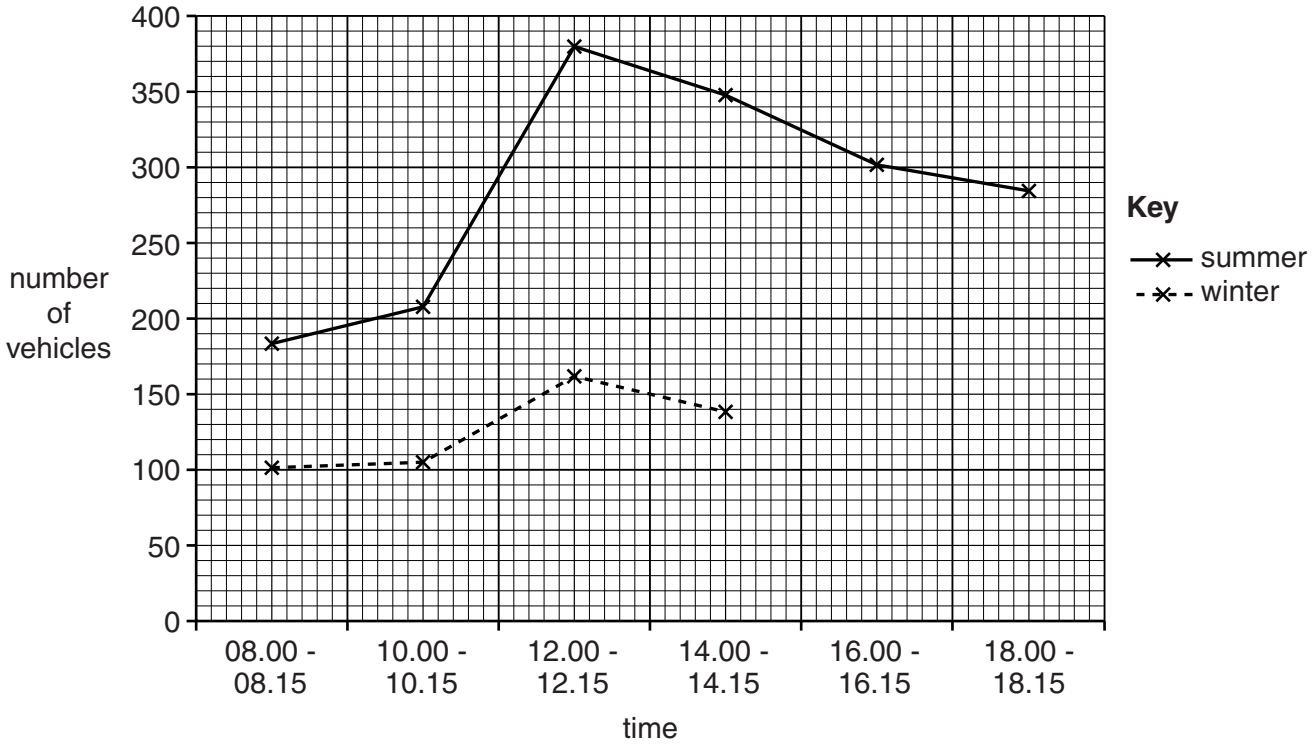

Fig. 11A

Traffic survey results at location Y

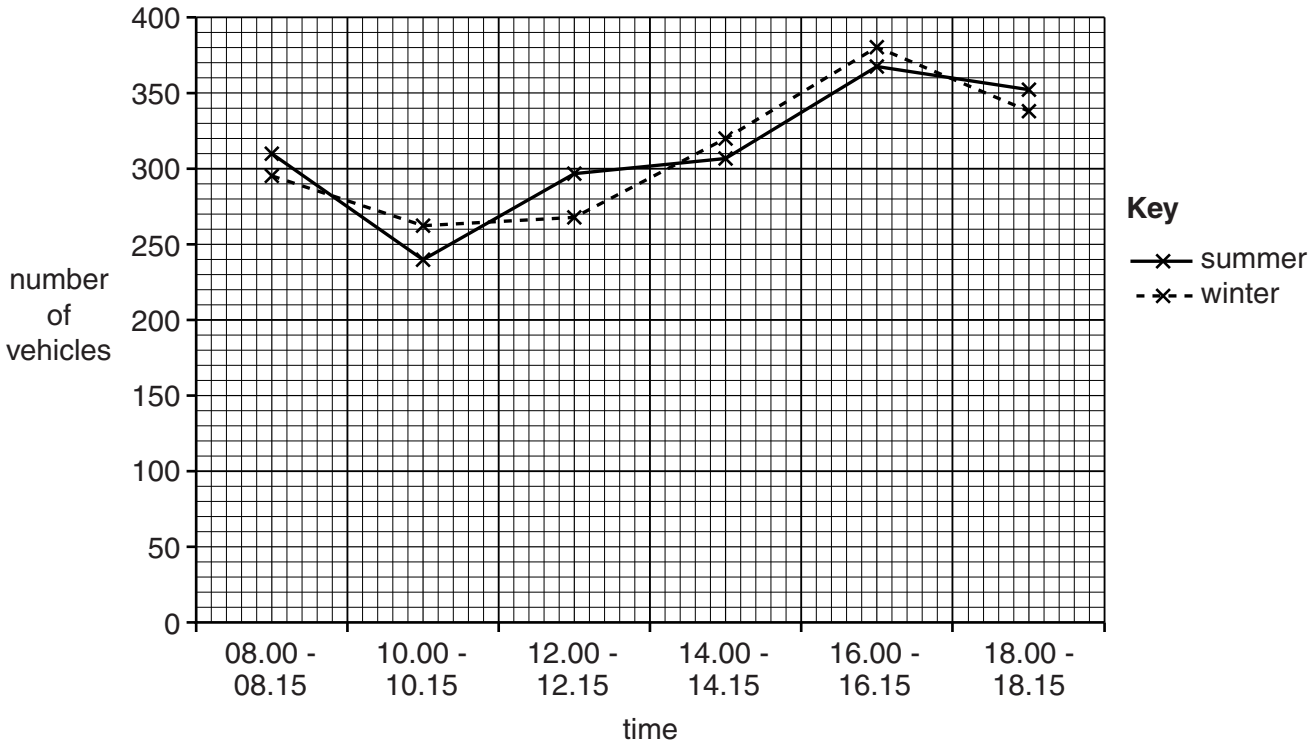

Fig. 11B

(iv) The students made the following conclusions about **Hypothesis 2:** *The amount of traffic is greater in summer than in winter because of tourism.*

The hypothesis is true at location **X**.

The hypothesis is false at location **Y**.

Support both of these conclusions with evidence from Figs 11A and 11B.

Location **X**

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Location **Y**

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.....[4]

(v) Look again at Fig. 10 (Insert). Suggest why the results varied between locations **X** and **Y**.

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.....[2]

(d) Some students decided to extend their fieldwork by finding out about methods of transport used to travel to the city. Three questions were suggested which are shown below.

Question	Question
1	What type of car do you drive?
2	Have you come here by car?
3	How have you travelled to the city?

The students decided that only Question 3 was suitable to ask people. Explain why the other two questions were rejected.

Question 1

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.....

Question 2

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.....[2]

[Total: 30 marks]

8 Students were planning fieldwork on a local pebble beach. The students wanted to investigate beach profiles and the action of longshore drift on the beach. Fig. 12 (Insert) shows the profiles of two beaches, one shaped by constructive waves and one shaped by destructive waves.

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

Use arrows to match the statements in columns **P** and **Q** in the tables below which show examples of preparations that were made.

P
Check the times of high tide
Work in groups of three or four
Charge up their mobile (cell) phone
Check the weather forecast

Q
to wear appropriate clothing and take sunblock
to communicate with their teacher if they have a problem
to know when it will be safe to make measurements on the beach
to complete all their tasks and check their measurements

[3]

The students decided to investigate the following hypotheses:

Hypothesis 1: *The local beach is shaped by constructive waves.*

Hypothesis 2: *Longshore drift along the beach is from west to east.*

(b) The students had learned that beach profiles can be different if affected by constructive or destructive waves.

Tick (✓) the correct statement to complete each of the following sentences about the two types of wave.

In a constructive wave

	Tick (✓)
backwash is stronger than swash	
backwash and swash are of equal strength	
swash is stronger than backwash	

The wave frequency of a destructive wave is

	Tick (✓)
less than 13 waves per minute	
exactly 13 waves per minute	
more than 13 waves per minute	

[2]

(c) (i) Describe a method the students could use to measure wave frequency.

.....

.....

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.....

.....[3]

(ii) The results of the students' measurements are shown in Table 3 below.

Table 3

Results of students' measurements

Measurement number	Waves per minute
1	7
2	8
3	7
4	9
5	6
6	8
7	7
8	10
9	8
10	6
Average	

Calculate the average number of waves per minute. Insert your answer into Table 3. [1]

[Turn over

(d) Fig. 13 (Insert) shows a method of measuring a beach profile.

(i) Describe the method shown.

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.....[4]

(ii) The students used their measurements to complete the beach profile shown in Fig. 14 below.

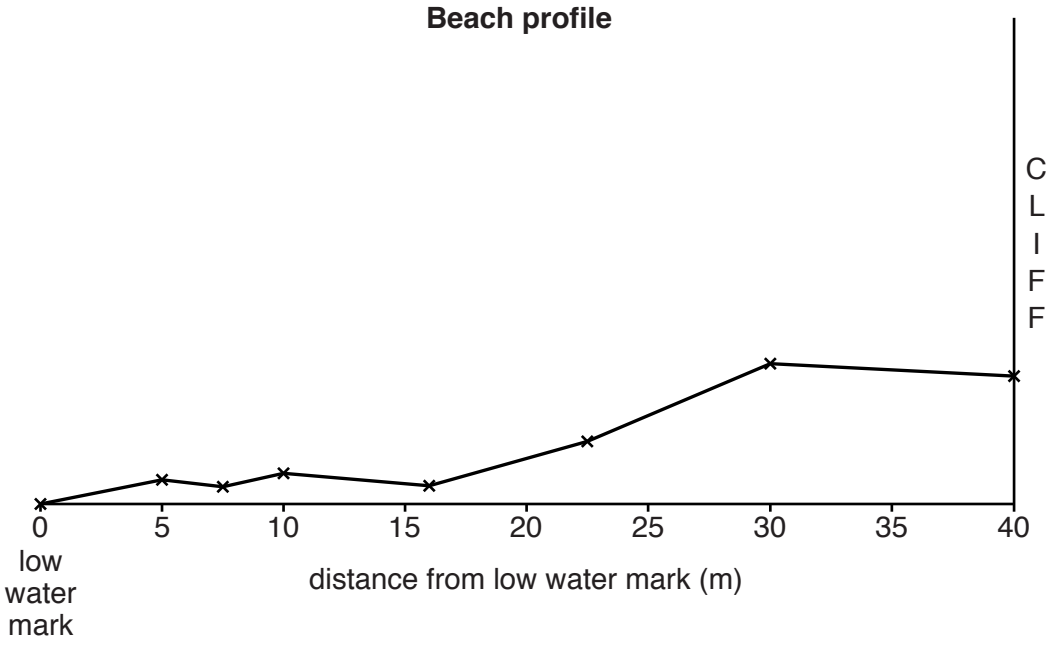

Fig. 14

The students decided that **Hypothesis 1:** *The local beach is shaped by constructive waves* was correct. Why did the students reach this decision? Support your answer with evidence from Table 3 and Fig. 14. Look again at Fig. 12 (Insert) to help you to answer.

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.....[3]

(e) (i) Movement of pebbles along the beach is by longshore drift. The students had learned that the direction of longshore drift is usually related to the wind direction.

Describe a simple method the students could use to work out the wind direction at the beach.

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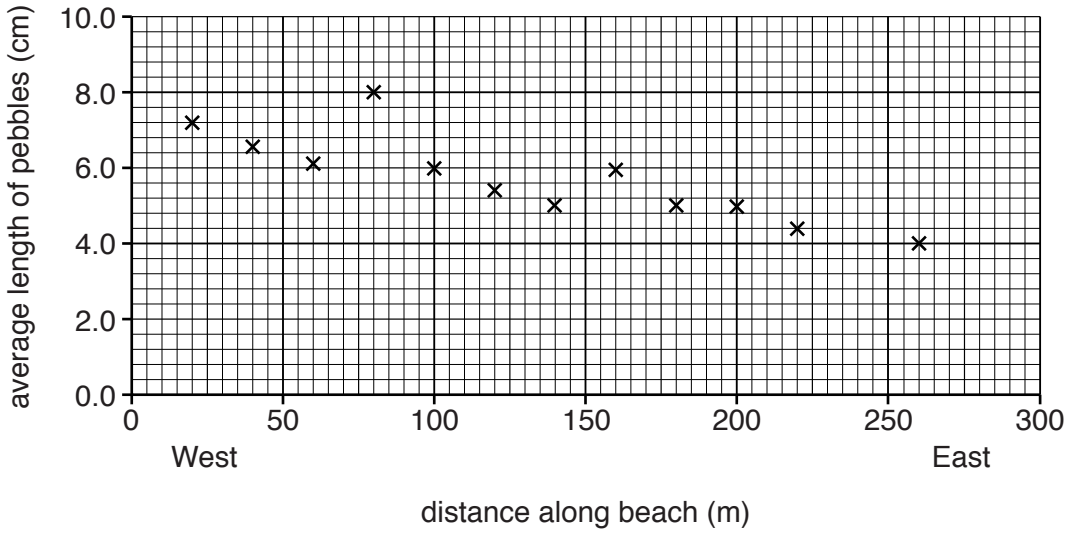
.....[2]

(ii) To investigate **Hypothesis 2:** *Longshore drift along the beach is from west to east*, the students stretched a tape measure along the beach near to the sea and randomly selected 20 pebbles every 20 metres. They then measured the length of the pebbles and calculated the average length at each point. Their results are shown in Table 4 (Insert).

Use these results to plot the average length of pebbles at 0 m and 240 m on Fig. 15 below. [2]

Results of pebble measurements



Key

× average length of 20 pebbles (cm)

Fig. 15

(iii) Smaller and lighter pebbles are carried more easily by waves than large heavy pebbles, so smaller pebbles are often carried further by longshore drift. Do these results support **Hypothesis 2:** *Longshore drift along the beach is from west to east*? Use evidence from Fig. 15 and Table 4 to support your answer.

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.....[3]

(iv) Describe another method the students could have used to measure longshore drift along the beach.

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.....[4]

(f) Cliffs at the back of a nearby beach are shown in Photograph B (Insert).

Suggest reasons why there is rock debris at the base of the cliffs.

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.....[3]

[Total: 30 marks]

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