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Cambridge IGCSE

Cambridge International Examinations
Cambridge International General Certificate of Secondary Education

CANDIDATE NAME

CENTRE NUMBER

CANDIDATE NUMBER

GEOGRAPHY **0460/42**

Paper 4 Alternative to Coursework **October/November 2018**

1 hour 30 minutes

Candidates answer on the Question Paper.

Additional Materials: Calculator
Protractor
Ruler

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.

Write your answer to each question in the space provided.
If additional space is required, you should use the lined pages at the end of the booklet.
The question number(s) must be clearly shown.

Answer **all** questions.

The Insert contains Figs. 1.1, 1.2 and 1.3 and Tables 1.1 and 1.2 for Question 1, and Figs. 2.2, 2.3 and Tables 2.1 and 2.2 for Question 2.
The Insert is **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 syllabus is approved for use in England, Wales and Northern Ireland as a Cambridge International Level 1/Level 2 Certificate.

This document consists of **17** printed pages, **3** blank pages and **1** Insert.

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CAMBRIDGE International Examinations

[Turn over

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1 Students from a college in Kenya were studying farming in their country. Farming in Kenya is varied with different crops grown and different types of livestock kept.
For their study the students did research in villages in two farming areas, one in the north and one in the south of the Makueni district.

(a) Farming in Kenya is both commercial and subsistence. What do these two terms mean?

Commercial farming

.....

.....

Subsistence farming

.....

..... [2]

(b) Fig. 1.1 (Insert) shows the four main crops grown in Kenya for export.

(i) How much wheat was grown in 2012?

..... thousand tonnes [1]

(ii) Compare the change in production of tea and maize between 2011 and 2014. Do **not** use statistics.

.....

.....

.....

..... [2]

The students tested the following hypotheses:

Hypothesis 1: *Land use on farms is different between the area in the north and the area in the south.*

Hypothesis 2: *The main difficulties for farmers in the two areas are environmental.*

(c) Fig. 1.2 (Insert) is a map and description of the areas investigated.
Which village shown on Fig. 1.2 is described below?

The village is located in the dry lowland area about 18 km from the main road between Nairobi and Mombasa.

Name of village: ..... [1]

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(d) To investigate the two hypotheses the students used a questionnaire with 20 farmers in each area. The questionnaire is shown in Fig. 1.3 (Insert).

(i) First they carried out a pilot study with farmers in a village near to their college. Explain why this is a good fieldwork technique.

.....

.....

.....

..... [2]

(ii) The students took a random sample of 20 farms in each area. Give **one** advantage and **one** disadvantage of random sampling.

Advantage

.....

.....

Disadvantage

.....

..... [2]

(iii) Name and describe **one** other sampling method the students could have used to choose the farms.

Name of sampling method: .....

Description

.....

.....

.....

..... [3]

(e) A questionnaire is one method used to collect primary data.

(i) What is meant by *primary data*?

.....

..... [1]

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(ii) Suggest **two** practical difficulties for the students of using a questionnaire to collect data in the farming areas.

1 .....

.....

2 .....

..... [2]

(f) **(i)** The results of Questions 1 to 4 in the questionnaire are shown in Table 1.1 (Insert). **Plot the results** for Questions 1, 2 and 3 for Kaiani on Fig. 1.4 below. [2]

Land use on farms in four villages in Makueni

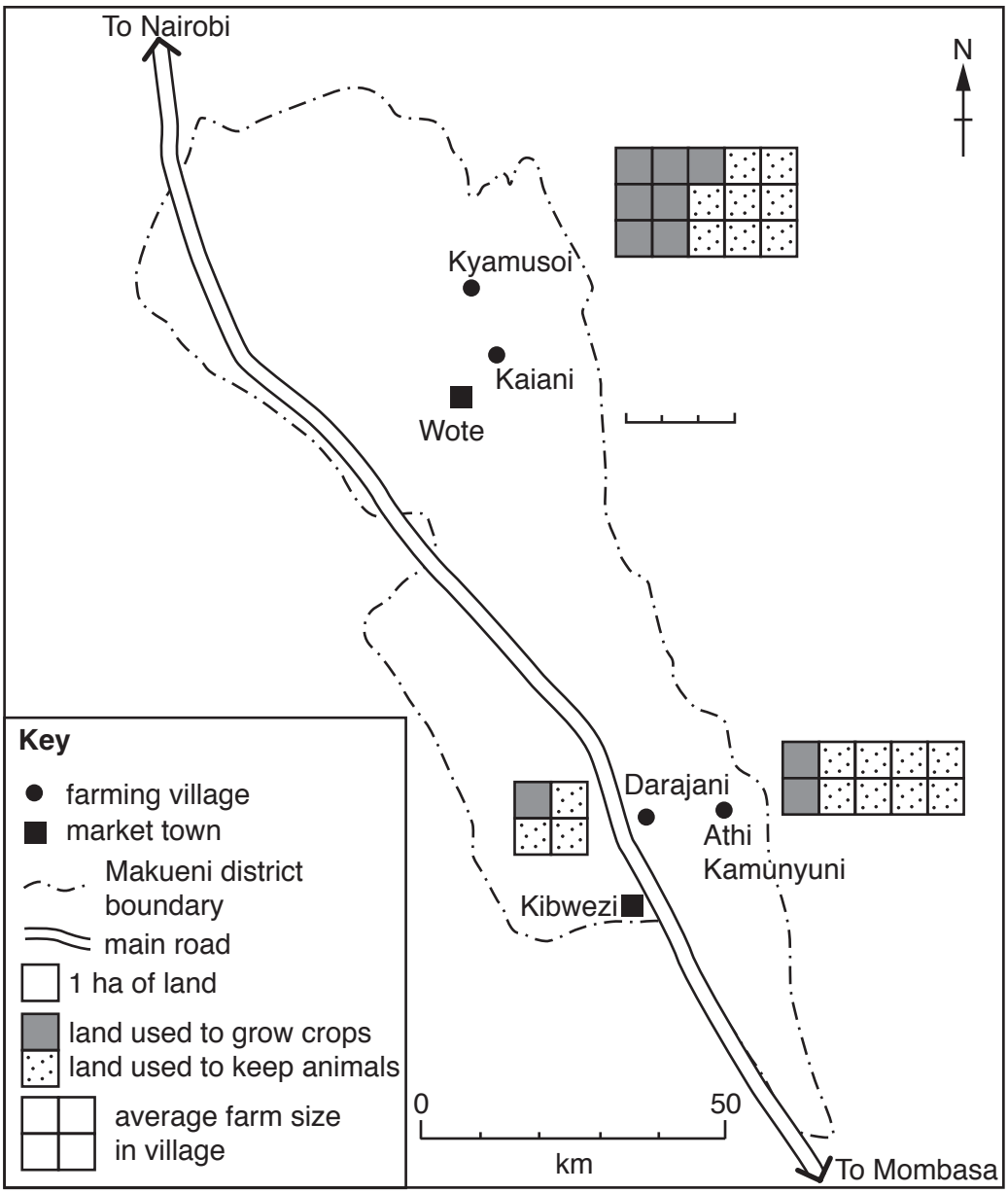


Fig. 1.4

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(ii) What conclusion would the students make about **Hypothesis 1:** *Land use on farms is different between the area in the north and the area in the south*? Support your decision with evidence from Fig. 1.4 and Table 1.1.

.....

.....

.....

.....

.....

..... [3]

(g) To get some information to test **Hypothesis 2:** *The main difficulties for farmers in the two areas are environmental*, the students asked Question 5 in the questionnaire. The results of this question are shown in Table 1.2 (Insert).

(i) Use the results **to complete the pie graph** in Fig. 1.5 below. [2]

Farming difficulties

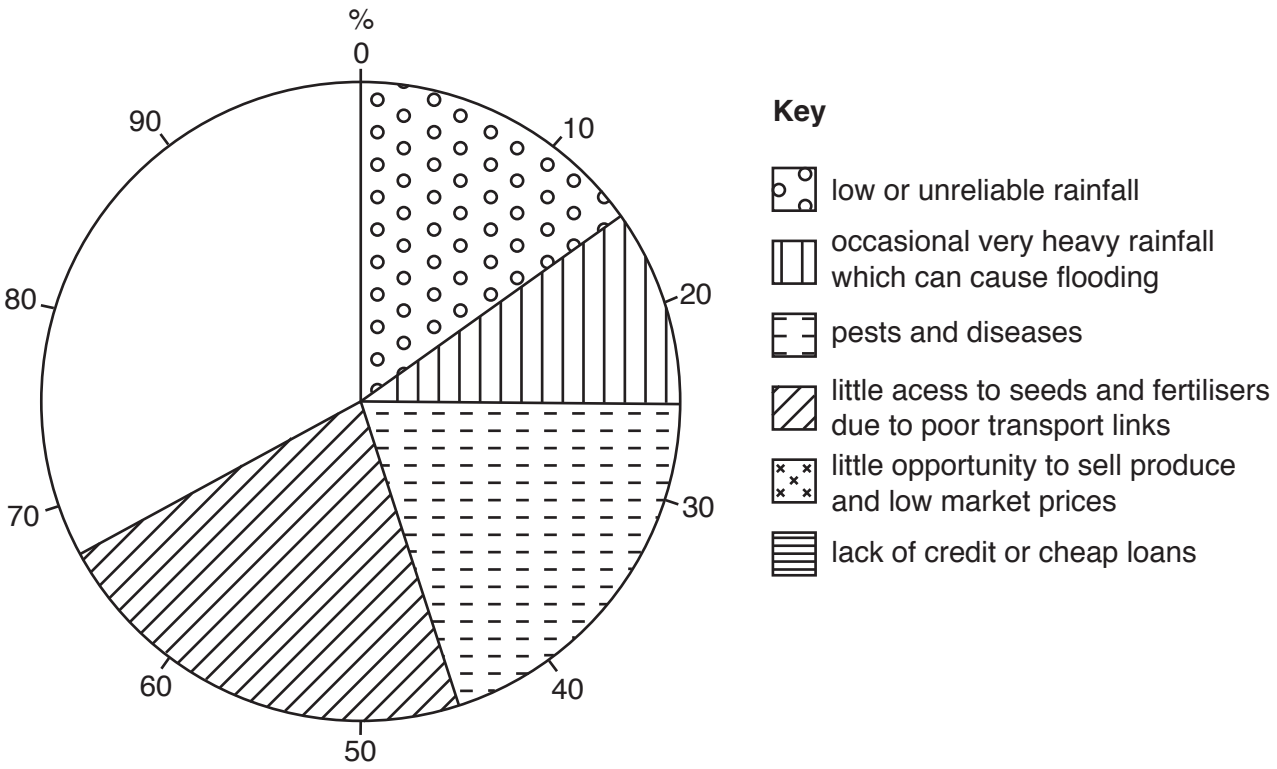


Fig. 1.5

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(ii) Do the results support **Hypothesis 2:** *The main difficulties for farmers in the two areas are environmental*? Support your decision with evidence from Fig. 1.5 and Table 1.2.

.....

.....

.....

.....

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.....

..... [4]

(h) Suggest how farmers in the village of Darajani could overcome the problem of water shortage caused by low or unreliable rainfall.

.....

.....

.....

.....

.....

..... [3]

[Total: 30]

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2 Students were planning fieldwork on a local river. They decided to investigate possible differences between a section where the river meandered and another section where the channel was straight.

(a) First they visited the river and identified two sections about 100 m apart which were suitable for their fieldwork. These are shown in Fig. 2.1 below.

Sketch map of fieldwork area

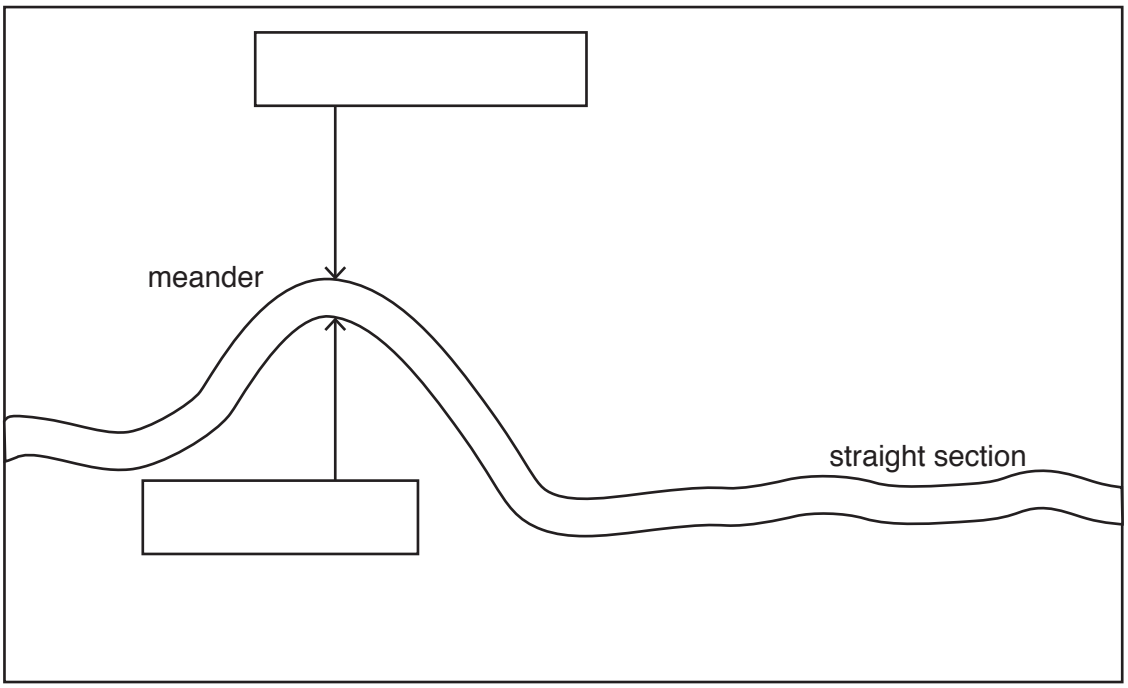


Fig. 2.1

(i) On Fig. 2.1 **write the words** EROSION and DEPOSITION in the two boxes to show where these processes occur. [1]

(ii) State the feature which may be formed if a meander is cut off from the river by erosion and deposition.

..... [1]

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The students investigated the following hypotheses:

Hypothesis 1: *The pattern of velocity (speed of flow) across the river is different in a meander and a straight section.*

Hypothesis 2: *Pebbles on the river bed (bedload) are larger where velocity is faster.*

(b) To investigate **Hypothesis 1** the students measured velocity using a flowmeter, as shown in Figs. 2.2 and 2.3 (Insert).

(i) Describe how the students used a flowmeter to measure velocity.

.....

.....

.....

..... [2]

(ii) Give **one** advantage and **one** disadvantage of this method.

Advantage

.....

.....

Disadvantage

.....

..... [2]

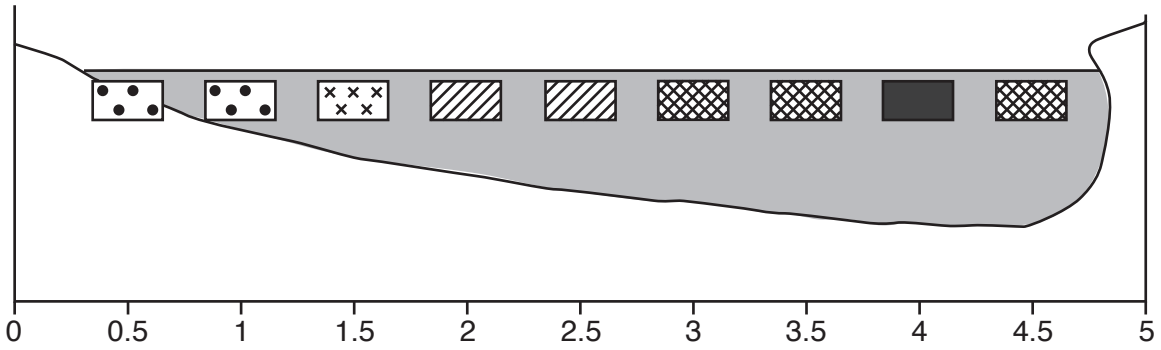
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(c) The students measured velocity every 0.5 m across a river meander and straight section. Their results are shown in Table 2.1 (Insert).

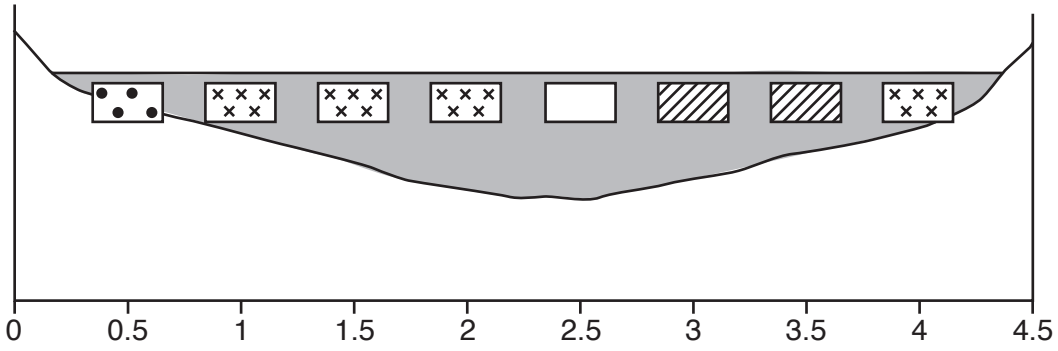
(i) **Plot the result** at the point 2.5 m from the bank on the straight section in Fig. 2.4 below. Use the key provided. [1]

Velocity across the river

Meander



Straight section



Key

velocity (m / sec)

 more than 0.60

 0.51 to 0.60

 0.41 to 0.50

 0.31 to 0.40

 0.21 to 0.30

Fig. 2.4

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(ii) The students made the conclusion that **Hypothesis 1:** *The pattern of velocity (speed of flow) across the river is different in a meander and a straight section* is correct. Support this conclusion with evidence from Fig. 2.4 and Table 2.1.

.....

.....

.....

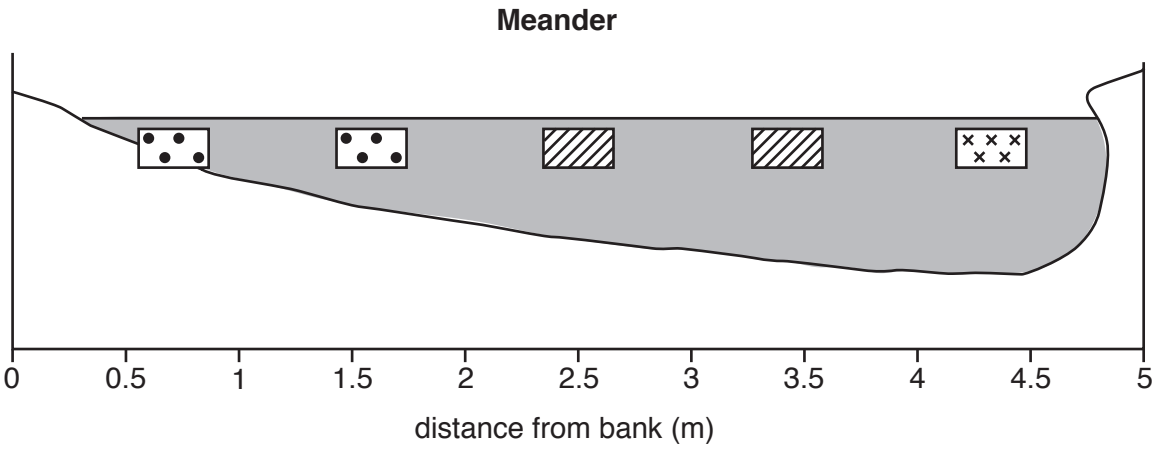
.....

.....

..... [3]

(iii) One student compared the group's results with some previous fieldwork results collected at the same meander. Students who had done the earlier fieldwork used a different method to calculate the average velocity. They measured the average time taken by floats to move 10 m along the river.
The results of the previous fieldwork are shown in Fig. 2.5 below.

Velocity measurements from previous fieldwork



Key

velocity (m / sec)

more than 0.60

0.51 to 0.60

0.41 to 0.50

0.31 to 0.40

0.21 to 0.30

Fig. 2.5

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Identify **two** main differences between the results for the meander shown in Figs. 2.4 and 2.5.

1 .....

.....

2 .....

..... [2]

(iv) Suggest **two** reasons why the results from the two fieldwork investigations at the meander are different.

1 .....

.....

2 .....

..... [2]

(d) To investigate **Hypothesis 2:** *Pebbles on the river bed (bedload) are larger where velocity is faster*, the students measured the size of five pebbles every 0.5 m across the river channel on both the meander and straight section.

(i) Suggest a method the students could have used to measure each pebble.

.....

.....

.....

..... [2]

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(ii) The results of the students' measurements on both sections of the river are shown in Table 2.1 (Insert).
To see if there was a relationship between velocity and pebble size the students plotted the results on scatter graphs shown in Fig. 2.6 below.
Plot the results at 2.0 m and 4.0 m across the meander in Fig. 2.6. [2]

Relationship between velocity and length of pebbles

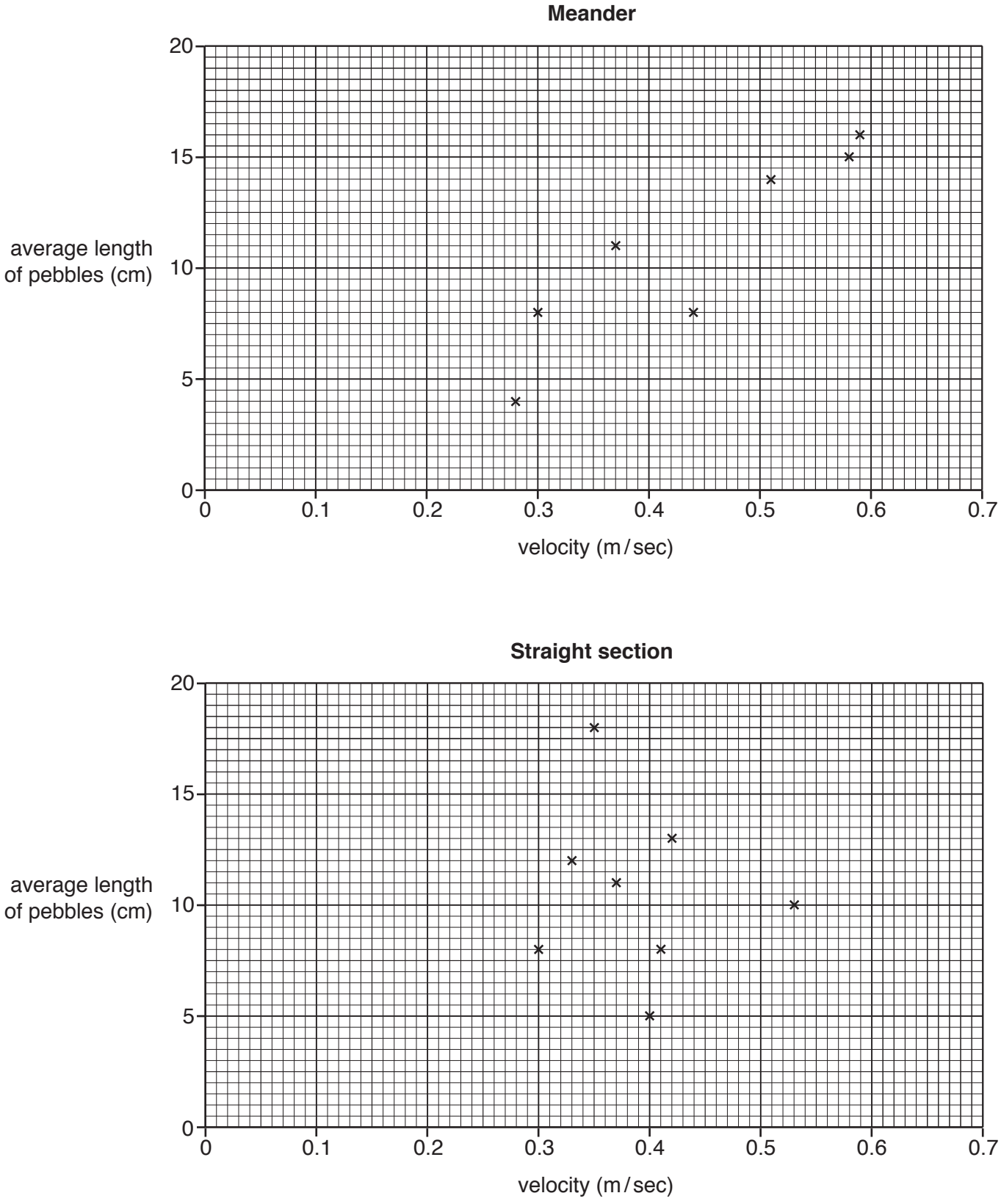


Fig. 2.6

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(iii) Do the results shown in Fig. 2.6 and Table 2.1 support **Hypothesis 2:** *Pebbles on the river bed (bedload) are larger where velocity is faster*? Use data to support your answer. Refer to both the meander and the straight section.

Meander

.....

.....

.....

.....

Straight section

.....

.....

.....

..... [4]

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(e) Having completed their fieldwork the students looked at the Bradshaw model, which states that bedload becomes smaller downstream. To test this model they measured the size of five pebbles every 0.5 m across the river channel at another straight section of the river downstream. The results of the measurements at both sections are shown in Table 2.2 (Insert).

(i) The students plotted their results on histograms shown in Fig. 2.7 below.
Use the results in Table 2.2 to **complete the histogram** for the section further downstream in Fig. 2.7. [2]

Results of pebble measurements

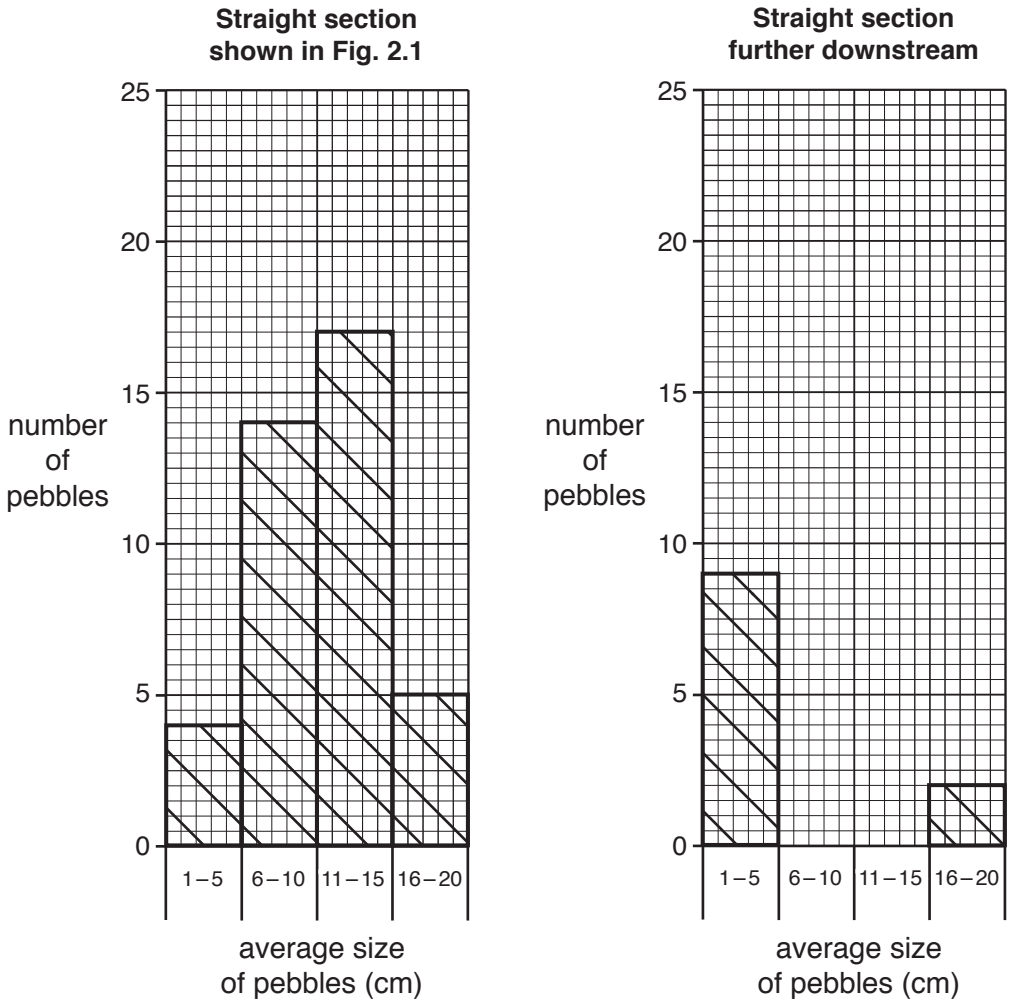


Fig. 2.7

(ii) Describe **two** pieces of evidence from Table 2.2 and Fig. 2.7 which show that bedload becomes smaller downstream.

1 .....

.....

2 .....

..... [2]

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(iii) Explain why bedload becomes smaller downstream.

.....

.....

.....

..... [2]

(f) Identify the **two** statements below which describe how river characteristics change downstream. Tick (✓) your choices. [2]

	Tick (✓)
average velocity decreases downstream	
channel depth increases downstream	
channel width decreases downstream	
discharge increases downstream	
gradient increases downstream	

[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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