UNIVERSITY OF CAMBRIDGE INTERNATIONAL EX
International General Certificate of Secondary Educati

CANDIDATE NAME

CENTRE NUMBER | | | | | |

CAN NUMBER

3221136678

ENVIRONMENTAL MANAGEMENT **0680/43**

Alternative to Coursework **October/November 2013**

1 hour 30 minutes

Candidates answer on the Question Paper.

Additional Materials: Ruler

READ THESE INSTRUCTIONS FIRST

Write your Centre number, candidate number and name on all the work you hand in.
Write in dark blue or black pen.
You may use a pencil for any diagrams, graphs or rough working.
Do not use staples, paper clips, highlighters, glue or correction fluid.
DO **NOT** WRITE IN ANY BARCODES.

Answer **all** questions.

Electronic calculators may be used.
You may lose marks if you do not show your working or if you do not use appropriate units.

Study the appropriate source materials before you start to write your answers.
Credit will be given for appropriate selection and use of data in your answers and for relevant interpretation of these data. Suggestions for data sources are given in some questions.
You may use the source data to draw diagrams and graphs or to do calculations to illustrate your answers.

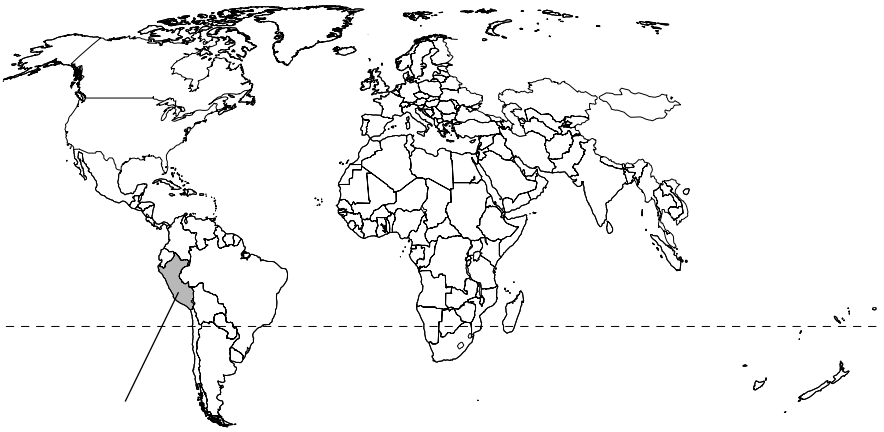
At the end of the examination, fasten all your work securely together.
The number of marks is given in brackets [ ] at the end of each question or part question.

For Examiner's Use	
1	
2	
Total	

This document consists of **15** printed pages and **1** blank page.

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world map, showing the location of Pe



map of Peru showing the location of Lima



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Area of Peru: 1 285 216 sq km

Population: 30 million

Children per woman: 2.6

Life expectancy: 74 years

Currency: soles (2.9 = 1US$)

Language: Spanish, indigenous languages

Climate: driest in the west, cold mountains in the centre, equatorial in the east

Terrain: western coastal plain, high Andes mountains in the centre, eastern lowlands in the Amazon Basin

Main exports: minerals, such as copper, gold, zinc and many others, fishmeal and agricultural produce.

Peru is a developing country that has very large mineral resources in the Andes Mountains. The coastal waters are excellent fishing grounds. These provide up to 70% of the world catch of anchovy. Economic growth has resumed after the world recession and the level of poverty has been reduced in recent years. Peru has many trade deals and has a low rate of inflation.

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1 (a) (i) Suggest why anchovy fishing is a valuable part of the Pe

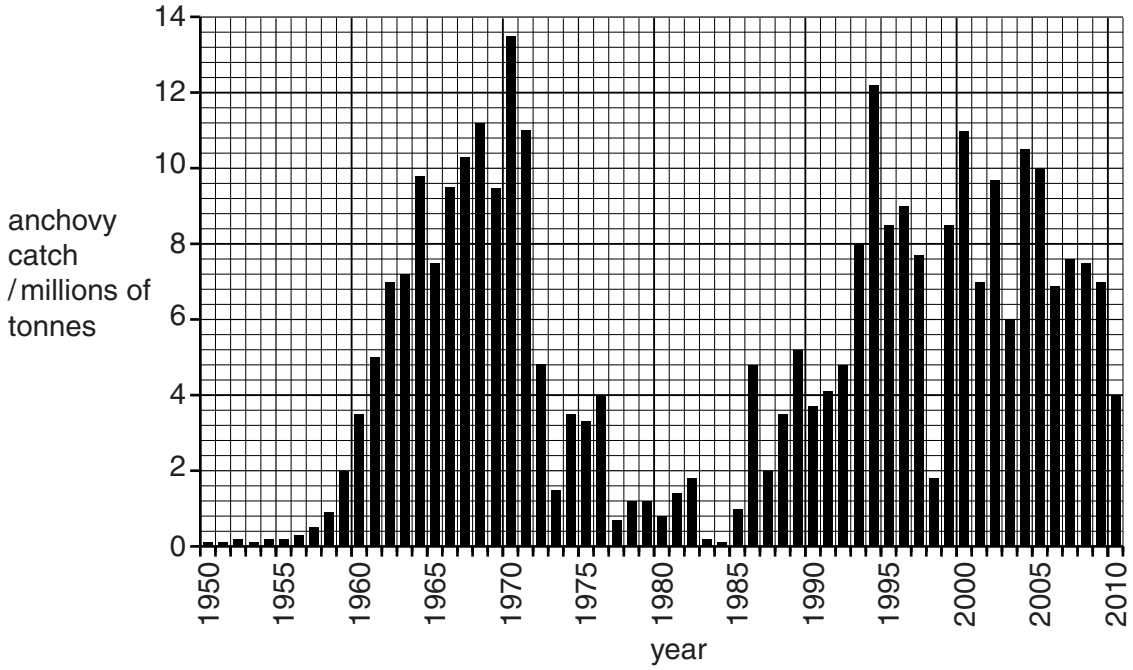
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The total catch of anchovy is different every year 1950–2010 are shown on the graph.



(ii) State the anchovy catch in 1970 and in 1973 and calculate the percentage decline over this period.

1970 ...../millions of tonnes 1973 ...../millions of tonnes

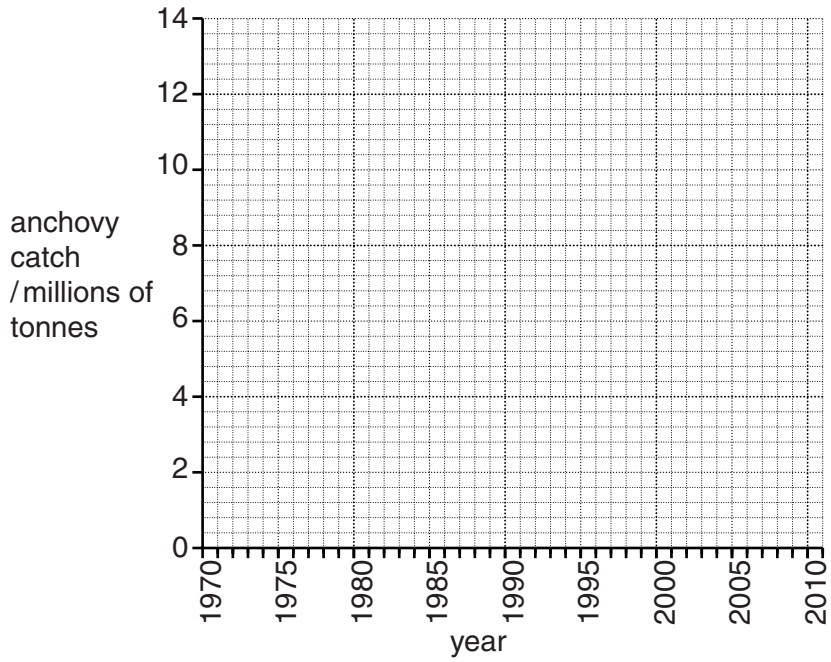
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(iii) The occasional climatic event termed El Niño causes Ministry of Production and for the fishermen. The table s events occurred between 1970 and 2010.

year	1972–1973	1982–1983	1997–199

Using the graph on page 4, draw and label on the grid b the **pattern** of anchovy catches from 1970 to 2010. Cle each of the strong El Niño events.



[2]

(iv) Describe the effect an El Niño event has on anchovy catches.

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..... [2]

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(b) Most of the anchovy catch is processed in factories into fish
The number of fishing boats increased from 600 in 1990 to 9

The Peruvian Ministry of Production insists that every fishin
Fish processing factories are not allowed to buy anchovy fro

(i) Suggest why the Ministry of Production decided to licen

.....

.....

(ii) Several new fishing boats apply for a licence each year. The Ministry of Production will not allow the total number of licences to increase.

Suggest how the owner of a new boat can obtain a licence.

.....

..... [1]

(iii) The Ministry of Production has put in place other measures to control the total anchovy catch.

Explain how each measure helps to control the total anchovy catch.

minimum fishing net mesh size is 13 mm .....

.....

minimum length of fish caught is 12 cm .....

.....

each boat has a fish quota .....

.....

limited number of fishing days each year .....

..... [4]

(iv) Suggest one other control measure that could be placed on fishing gear.

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..... [1]

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(v) Describe ways in which the government can enforce th illegal fishing.

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(c) The Ministry of Production has still not entirely stopped the 'race for fish'. At the beginning of each fishing season every boat lands as much anchovy as possible until their quota is reached.

(i) Suggest how the 'race for fish' causes problems for the fish processing plants.

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..... [2]

(ii) Explain how the 'race for fish' makes it easier to land anchovy illegally.

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..... [1]

(iii) To try to stop the 'race for fish' the Ministry of Production publishes a list of the names of licensed boats allowed to fish that day and those that are not. The list changes every day.

Explain the advantages of this system to:

fishermen .....

.....

fish processors .....

..... [4]

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(d) The Ministry of Production has introduced a system for throughout the year. Look at the flow chart on page 9.

(i) How many months are closed to anchovy fishing in the y

.....

(ii) Explain how the Ministry surveys help to guide Ministry season starts.

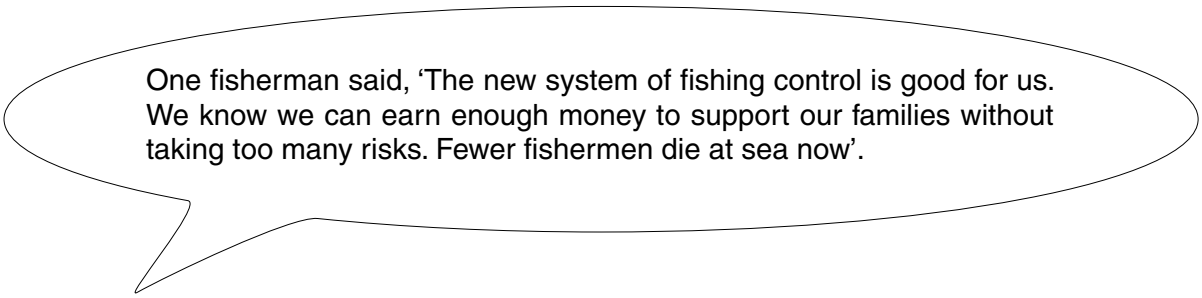
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..... [1]

(iii) Fill in the **two** blank boxes on the flow chart on page 9 to state what happens to fishing at those points.

Write your answers in the blank boxes in the flow chart. [1]

(e) A newspaper reported the views of some fishermen.



(i) Describe the risks to fishermen when they were allowed to fish every day.

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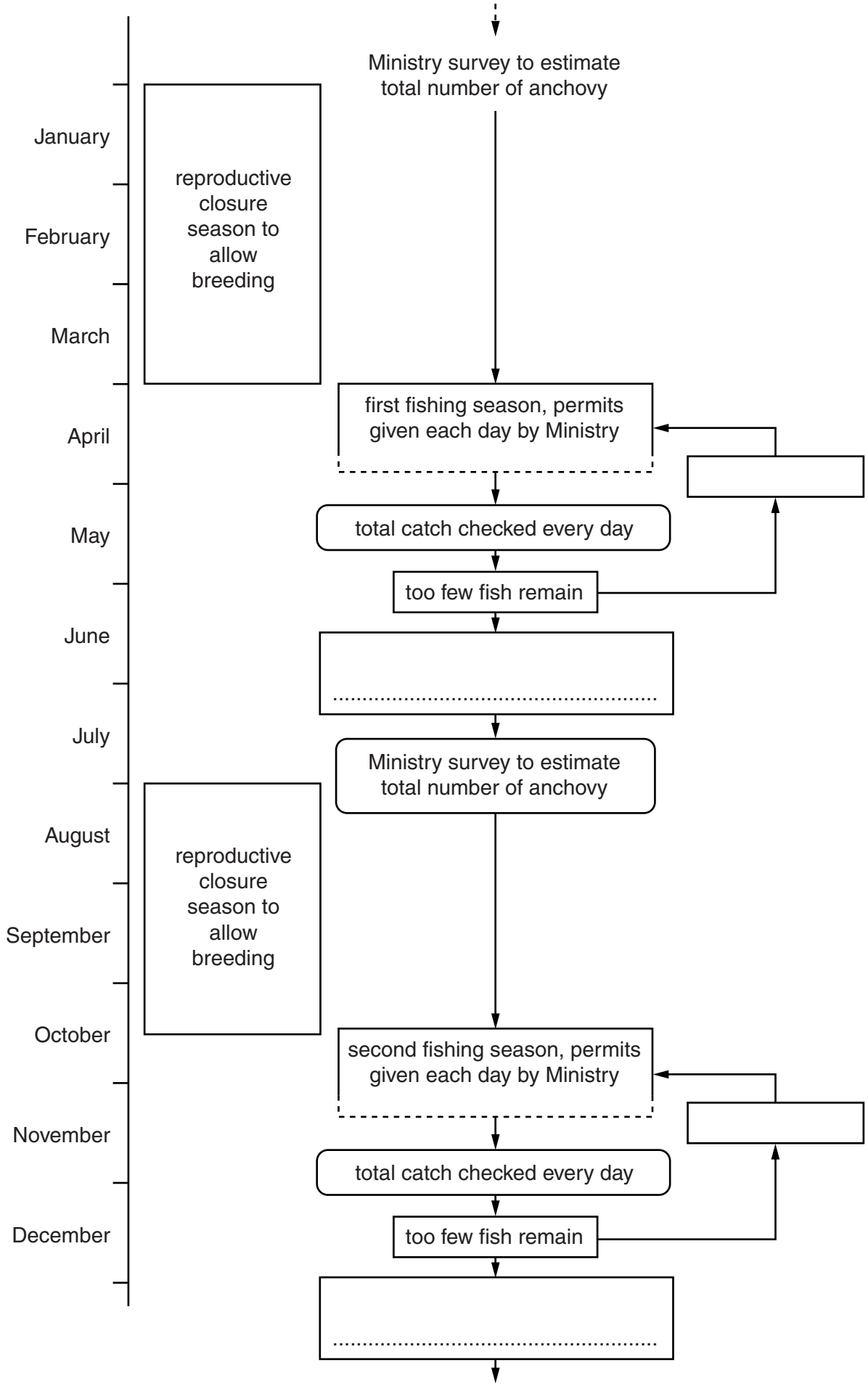
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flow chart of fishing year



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A second fisherman said, 'The new system of fishing c
I am earning less money than before. We should be all
when we want. I have a large family to support.'

(ii) Describe the argument you would use to persuade the new system is going to help him.

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..... [2]

(iii) The recorded anchovy catch for three boats in one fishing season is shown in the table below.

	anchovy catch / tonnnes			
boat	number of crew	first month's catch	second month's catch	total catch
Cristobal	4	100	80	180
Maria	3	80	70	.....
Nina	5	140	120	.....

Complete the table.

Write your answers in the spaces in the table. [1]

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(iv) The profits are shared equally between the people in boat gave the highest and lowest pay for each person.

Show your working in each case.

boat with highest pay .....

boat with lowest pay ..... [2]

(v) Recently, the Peruvian fishing industry was ranked 'best in the world for sustainability'.

Suggest why.

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.....

.....

..... [2]

[Total: 36]

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2 **(a)** Many Peruvian people live in poverty and rates of malnutritio
Production have increased the amount of anchovy fish that is
to mountain farming communities to try to reduce rates of ma

(i) Suggest how eating anchovy fish improves the health of

.....

.....

In Lima, the city authorities held 'anchovy week'. All the re
dishes and the market stalls sold anchovy for 1.0 soles per kg.

(ii) What benefits were expected from holding this event?

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..... [2]

(iii) Describe the problems that have to be overcome to distribute anchovy to poor people living in mountain farming communities.

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..... [3]

(b) In Lima, the poorest people live in houses that they have built themselves (self built houses) on land that they do not own. They have no legal rights and often no services.

Look at the climate data for Lima.

month	**J**	**F**	**M**	**A**	**M**	**J**	**J**	**A**	**S**	**O**	**N**	**D**
average daily temperature / °C	23	23	23	22	20	17	17	16	17	18	20	22
average monthly rainfall / mm	3	0	0	0	5	5	8	8	8	3	3	1

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Suggest why people living in self built houses in Lima face fe

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(c) The government has a national housing policy to encoura
central districts of cities such as Lima; the 'Return to the Centre' policy. This policy offers subsidies to help more people to move to the centre. Changes in the central districts of Lima in the last ten years include:

- more people living there
- new buildings are much taller
- the average cost of housing has decreased
- more people live in apartments than houses
- parks and open spaces cover a smaller area

(i) Suggest the environmental advantages and disadvantages of carrying out this housing policy.

advantages .....

.....

.....

.....

disadvantages .....

.....

.....

..... [4]

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(ii) A government official wanted to find out how successful policy had been. This official decided to use a questionna views about the policy. Two of the questions have been d

1. Do you agree that this housing policy has helped yo
2. Do you agree that housing is cheaper now than in t
3. .....

   .....
4. .....

   .....
5. .....

   .....

Complete the questionnaire with three further questions to find how this housing policy has affected people in Lima.

Write your answers in the spaces above. [4]

(iii) The government official visited one central district (**A**) and three districts on the edge of Lima (**B**, **C** and **D**).

Describe how the official made sure he sampled each district fairly.

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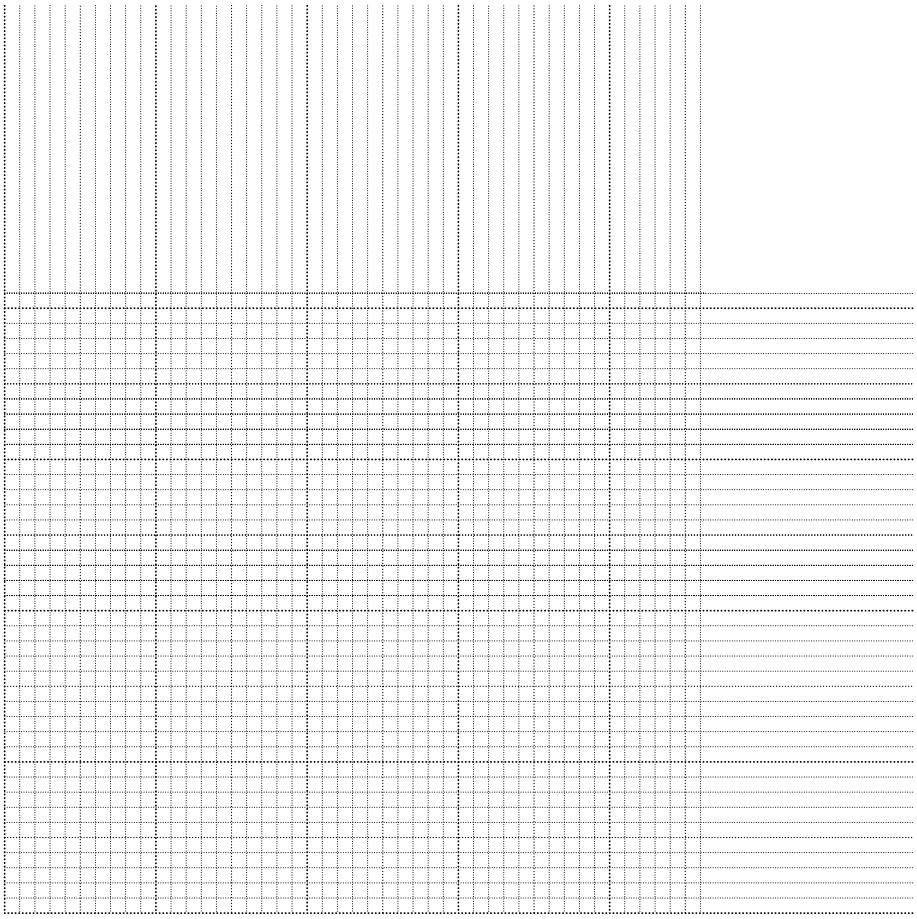
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(iv) Some of the results of the official survey are shown in the table below.

district	percentage of people agreeing that this housing policy helped them	percentage of people agreeing that housing was cheaper now than in the past
A	45	25
B	15	20
C	5	14
D	8	12

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Plot the data of the results of the official survey on a gra



[4]

(v) Suggest why in districts **B** and **C** more people agreed that housing was cheaper now, than said they had been helped by the policy.

.....

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..... [2]

[Total: 24]

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