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UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS
International General Certificate of Secondary Education

CANDIDATE NAME

CENTRE NUMBER | | | | | |

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1981911162

GEOGRAPHY **0460/21**

Paper 2 **October/November 2012**

1 hour 30 minutes

Candidates answer on the Question Paper.

Additional Materials: Ruler
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 a soft pencil for any diagrams, graphs or rough working.
Do not use staples, paper clips, highlighters, glue or correction fluid.
DO **NOT** WRITE ON ANY BARCODES.

Answer **all** questions.
The Insert contains Photographs A, B and C for Question 4.
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.

For Examiner's Use	
Q1	
Q2	
Q3	
Q4	
Q5	
Q6	
Total	

This document consists of **14** printed pages, **2** blank pages and **1** Insert.

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1 Study the map extract, which is for Luchetche, Zimbabwe. The scale is 1:50 000.

(a) Fig. 1 shows some of the features in the south west part of the map extract. Study Fig. 1 and the map extract, and answer the questions below.

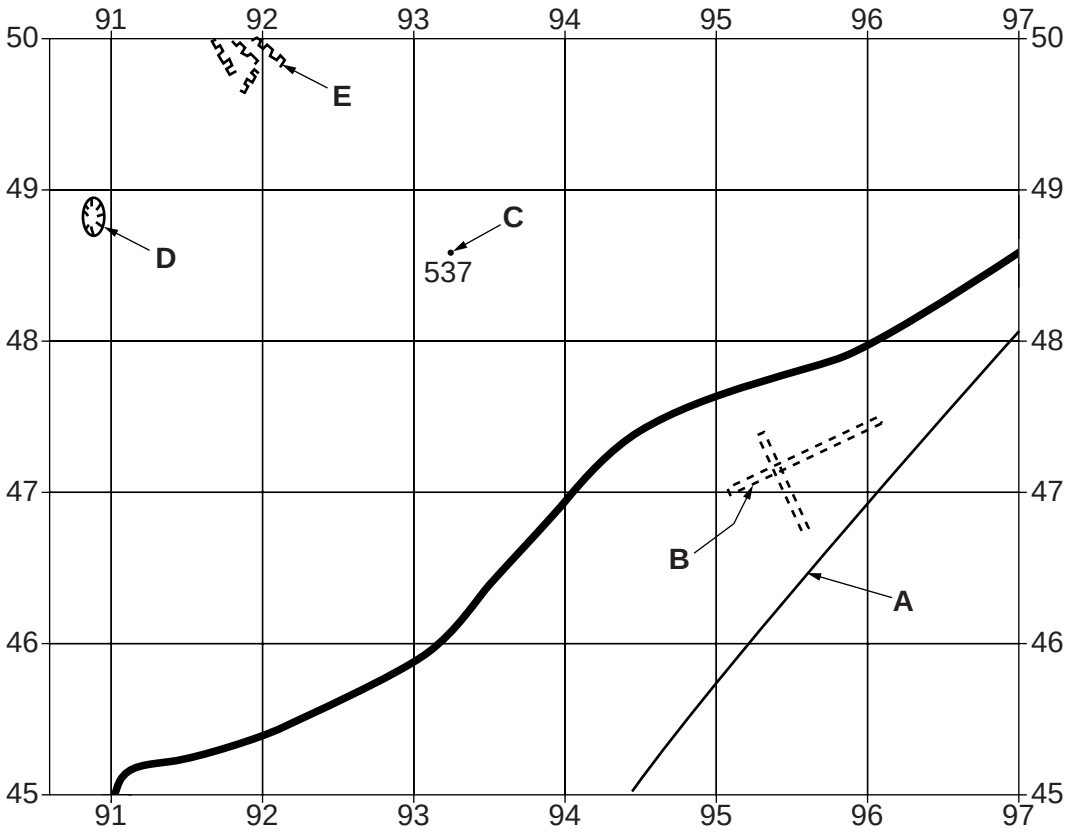

Fig. 1

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

(i) the type of road at **A**;

..... [1]

(ii) feature **B**;

..... [1]

(iii) feature **C**;

..... [1]

(iv) feature **D**;

..... [1]

(v) the features at **E**.

..... [1]

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(b) Look at the two main rivers in the centre of the map extract: the Chamunanga a
Chantalikiti rivers.

(i) What is the general direction of flow of these rivers? Tick (✓) **one** correct answer.

Direction	Tick (✓)
east to west	
west to east	
north to south	
south to north	

[1]

(ii) Give **two** pieces of map evidence for the direction of flow.

1 .....

.....

2 .....

..... [2]

(iii) Measure the distance along the railway between the bridges over the two rivers. Give your answer in metres.

..... metres [1]

(iv) What is the six figure grid reference of the railway bridge over the Chamunanga river? Circle **one** correct answer below.

996504 986495 495986 987496 [1]

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(c) Fig. 2 is a cross section along northing 49 from 960490 to 020490.

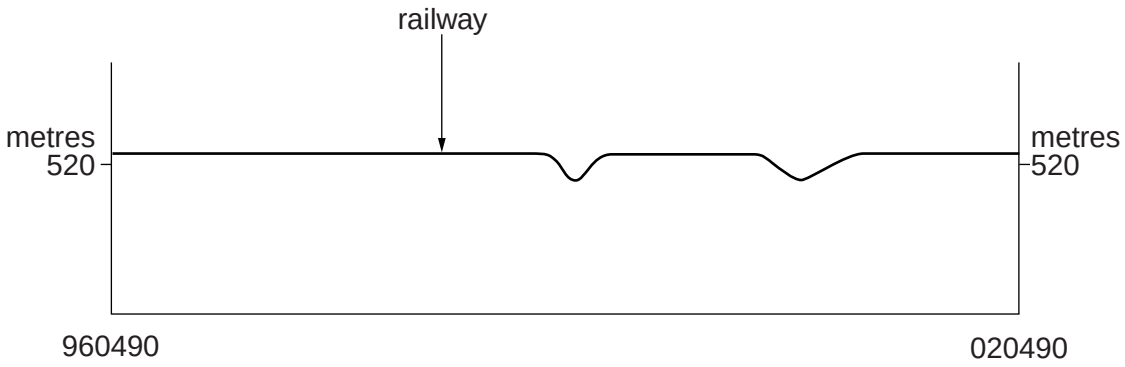

Fig. 2

On Fig. 2, using labelled arrows, mark the positions of:

(i) the Chantalikiti river; [1]

(ii) the wide tarred road; [1]

(iii) a building. [1]

(d) Look at the north west quarter of the map extract, west of easting 97 and north of northing 50. Describe settlement, transport and water supply in this area.

Settlement .....

.....

.....

Transport .....

.....

.....

Water supply .....

.....

..... [4]

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(e) Fig. 3 shows part of the valley of the Lukange river in the south east of the map e

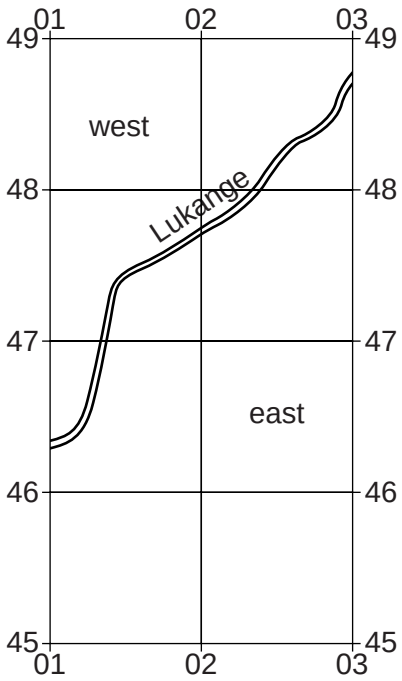

Fig. 3

For the area shown on Fig. 3, describe the differences in relief between the land east of the river and the land west of the river.

.....

.....

.....

.....

.....

.....

.....

..... [3]

[Total: 20 marks]

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2 Study Table 1, which shows the effects of earthquakes of different intensities (strengt

Table 1

Intensity value	Description of effects
1	Not normally felt. Birds and animals uneasy.
2	Felt only by a few people at rest.
3	Vibrations like a large truck passing. Felt by people at rest.
4	Felt indoors by many. Cars rock.
5	Sleepers wakened. Some windows broken.
6	Small bells ring. Trees sway. Loose objects fall.
7	Difficult to stand up. People run outdoors. Walls crack.
8	Partial collapse of buildings. Chimneys fall.
9	Ground cracks. Buildings move off foundations. Pipes break.
10	Landslides. Many buildings destroyed.
11	Few buildings stand. Bridges destroyed.
12	Total destruction. Ground surface rises and falls in waves.

(a) What is the lowest intensity value at which there is any damage to buildings?

..... [1]

(b) Fig. 4 is a map showing the effects of an earthquake at Loma Prieta in California, USA, in 1989. Study Fig. 4 and Table 1 and answer the questions on the opposite page.

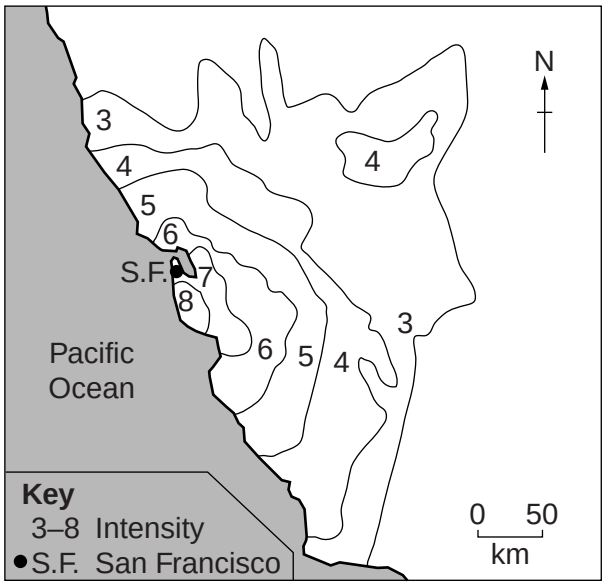

Fig. 4

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(i) On Fig. 4, label the likely position of the epicentre of the earthquake w... letter **E**.

(ii) On Fig. 4, shade an area where small bells rang, trees swayed and loose objects fell. [1]

(iii) Describe the pattern of earthquake intensity shown on Fig. 4.

.....

.....

.....

..... [2]

(iv) Suggest **one** reason why the pattern shown on Fig. 4 is not even.

.....

..... [1]

(c) Table 2 compares the Loma Prieta earthquake with other major earthquakes.

Table 2

Richter scale value (strength)	Date	Place	Number of deaths
9.1	2004	Sumatra	283 106
8.0	1556	Shenshi, China	830 000
7.6	2005	Pakistan	86 000
7.5	1976	Tangshan, China	255 000
7.1	1989	Loma Prieta, California	63
6.9	1995	Kobe, Japan	5470
6.7	1994	Northridge, California	57

Using evidence from Table 2, suggest **two** reasons why so many people died in the Shenshi earthquake.

1 .....

.....

2 .....

..... [2]

[Total: 8 marks]

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3 **(a)** Fig. 5 shows the Stevenson Screen, the container used to store instruments at a w… station. Features of the design have been labelled.

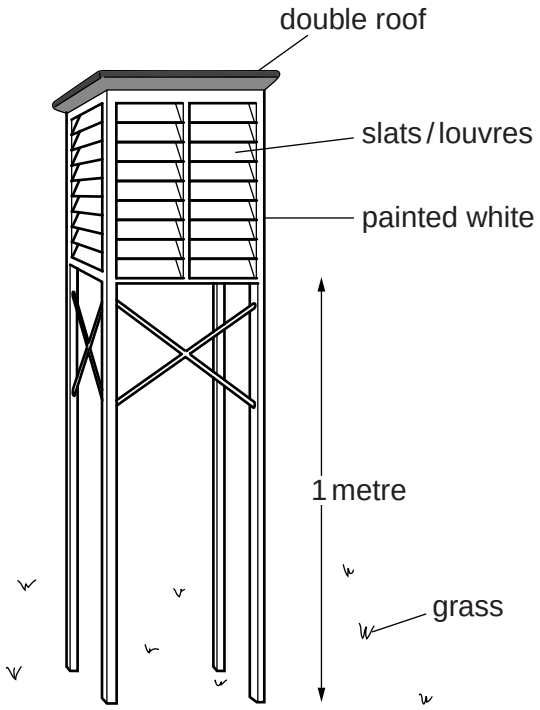

Fig. 5

Choose **two** of the features labelled on Fig. 5. For each of the features you have chosen, explain why the Stevenson Screen has been designed in this way.

Feature .....

Explanation .....

.....

.....

.....

Feature .....

Explanation .....

.....

.....

..... [4]

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(b) One of the instruments stored inside the Stevenson Screen is the hygrometer (wet and dry bulb thermometers). This is shown in Fig. 6 below. The readings are used to calculate the relative humidity using the conversion table, Table 3 below.

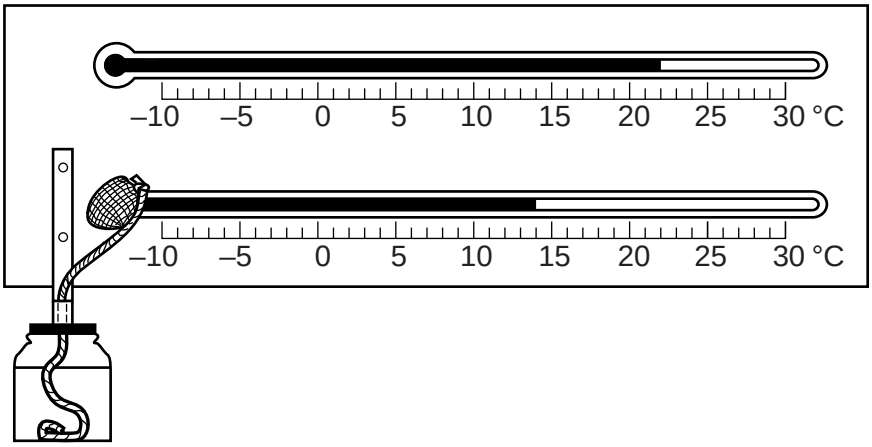

Fig. 6

Table 3

dry bulb reading (°C)	wet bulb depression (°C)								
	1	2	3	4	5	6	7	8	9
	%	%	%	%	%	%	%	%	%
24	92	84	77	69	62	56	49	43	37
22	92	83	76	68	61	54	47	40	34
20	91	83	74	66	59	51	44	37	30
18	91	82	73	65	56	49	41	34	27

(i) State the readings of the wet and dry bulb thermometers in Fig. 6.

Wet bulb .....

Dry bulb ..... [1]

(ii) Calculate the depression of the wet bulb.

..... [1]

(iii) Using your answers to **(b)(i)** and **(ii)** and Table 3, state the relative humidity.

..... [2]

[Total: 8 marks]

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4 Photographs A, B and C (Insert) show three industries.

(a) For each photograph, state whether the industry shown is a primary industry, secondary industry or a tertiary industry. Insert **one** tick (✓) in each row below.

	primary industry	secondary industry	tertiary industry
Photograph A			
Photograph B			
Photograph C			

[3]

(b) **(i)** Identify the industry shown in Photograph C.

..... [1]

(ii) The industry shown in Photograph C will have an impact on the local economy, environment and people. Suggest what advantages and disadvantages the industry might have for the local area.

Advantages .....

.....

.....

.....

.....

.....

Disadvantages .....

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.....

.....

.....

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..... [4]

[Total: 8 marks]

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5 Fig. 7 is a map showing the population densities of the 16 regions in North Island and South Island, New Zealand.

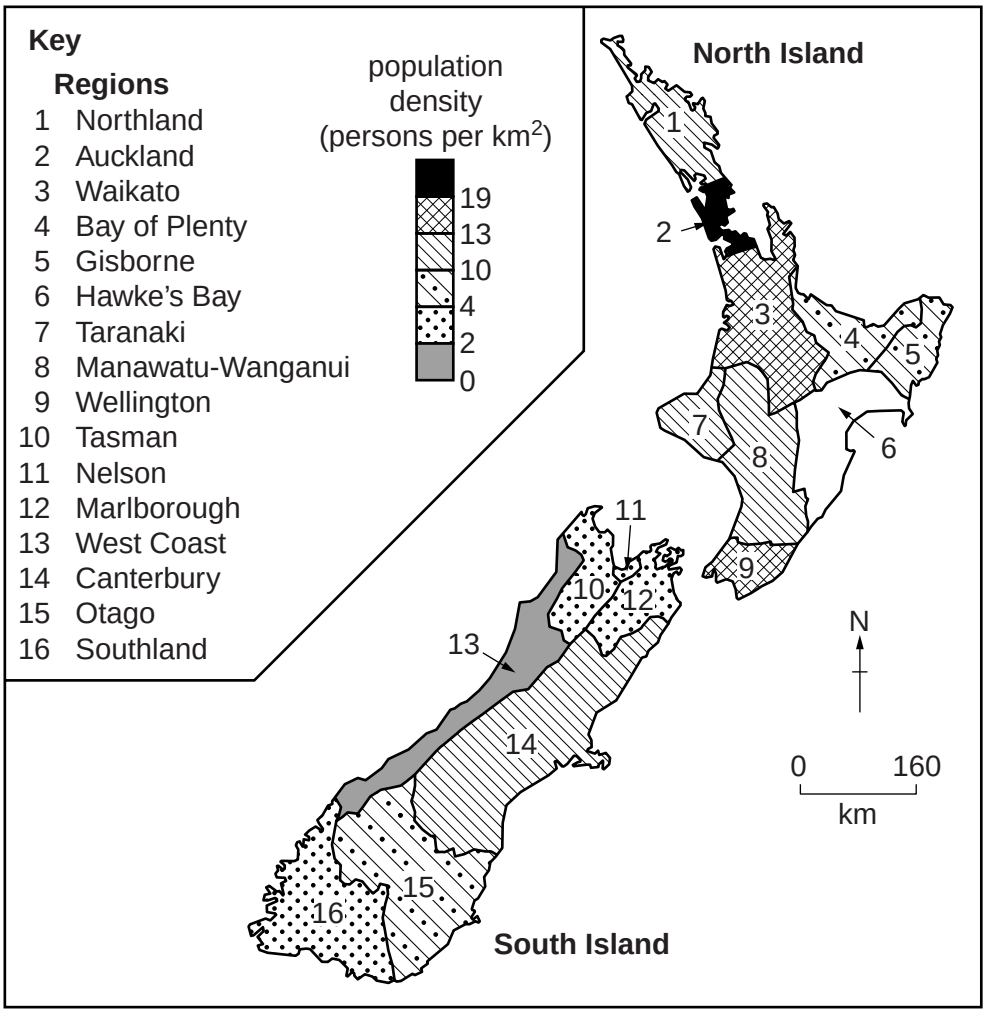

Fig. 7

(a) (i) Name **one** region with a population density of 10–13 persons per square kilometre.

..... [1]

(ii) Name the region of South Island, New Zealand which is the most sparsely populated.

..... [1]

(iii) The region of Hawke's Bay has a population density of between 13 and 19 persons per square kilometre. Using the key provided, complete Fig. 7 by adding this information. [1]

(iv) The region of Southland has an area of about 30 000 square kilometres. Using information from Fig. 7, estimate the population of Southland. Circle **one** correct answer below.

3000 30 000 90 000 150 000 [1]

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(b) Using Fig. 7, describe the distribution of population in South Island, New Zealand

.....

.....

.....

.....

.....

..... [3]

(c) Fig. 8 is a map showing the annual rainfall of South Island, New Zealand.

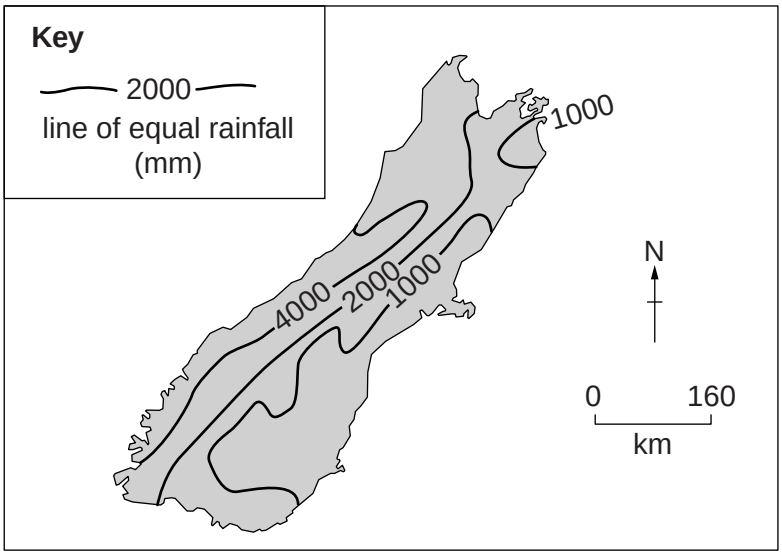

Fig. 8

What is the relationship between the distribution of population, shown on Fig. 7, and the amount of rainfall, shown on Fig. 8?

.....

..... [1]

[Total: 8 marks]

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6 Fig. 9 describes some of the features of agriculture in Kenya, East Africa.

Agriculture in Kenya

Agriculture is vital to the economy of Kenya. Farming is mostly carried out on small farms where no more than 2 hectares is cultivated. These small farms account for 75% of total production and much of this is subsistence production. The main cash crops are tea, vegetables and coffee. Production of tea and vegetables is increasing and these crops are important exports. Export of high-value vegetables, flowers and house plants often takes place by air to European markets. Coffee has declined in importance. Crop outputs vary unpredictably, partly due to weather conditions.

As some arable land is used for export crops, Kenya needs to import food to feed the population. For example, large quantities of wheat and maize are often imported. Environmental issues facing the country include deforestation, soil erosion, desertification and pollution from increased use of fertilisers and pesticides.

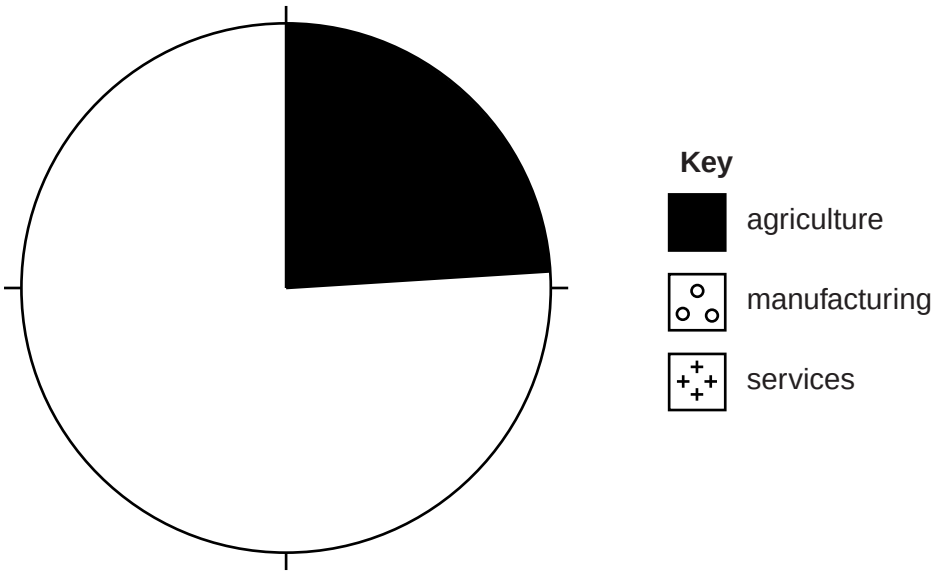
Fig. 9

(a) Table 4 shows the gross domestic product (economic output) of Kenya.

Table 4

	percentage of gross domestic product
agriculture	24%
manufacturing	14%
services	62%

Use the information in Table 4 to complete Fig. 10 below. Use the key provided.



[2]

Fig. 10

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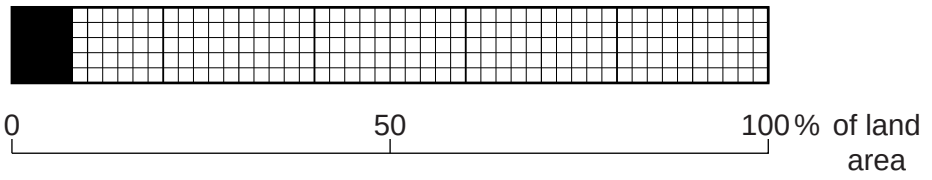
(b) Table 5 shows the types of land in Kenya.

Table 5

	percentage of total land area
land used for agriculture	8%
suitable for agriculture but not cultivated	12%
too dry or infertile to cultivate	80%

Use the information in Table 5 to complete Fig. 11 below. Use the key provided.



agriculture

suitable for agriculture but not cultivated

too dry or infertile to cultivate

[2]

Fig. 11

(c) Using information from Fig. 9 and Tables 4 and 5 **only**, suggest the possible effects on Kenya of increasing the production and export of vegetables, flowers and house plants.

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.....

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.....

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..... [4]

[Total: 8 marks]

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