



**Cambridge International Examinations**  
Cambridge International General Certificate of Secondary Education

CANDIDATE  
NAME

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CENTRE  
NUMBER

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CANDIDATE  
NUMBER

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**ENVIRONMENTAL MANAGEMENT**

**0680/22**

Paper 2

**October/November 2017**

**1 hour 45 minutes**

Candidates answer on the Question Paper.

No Additional Materials are required.

**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 an HB pencil for any diagrams or graphs.

Do not use staples, paper clips, glue or correction fluid.

DO **NOT** WRITE IN ANY BARCODES.

Answer **both** 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.

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 **16** printed pages.

1 (a) The table shows the percentage of the Earth's land surface covered by some biomes.

biome name	percentage of Earth's land surface
desert	19
tundra	11
taiga	17
temperate forest	8
savanna	10
tropical rainforest	13

(i) State the biome which covers the largest area of the Earth's land surface.

.....[1]

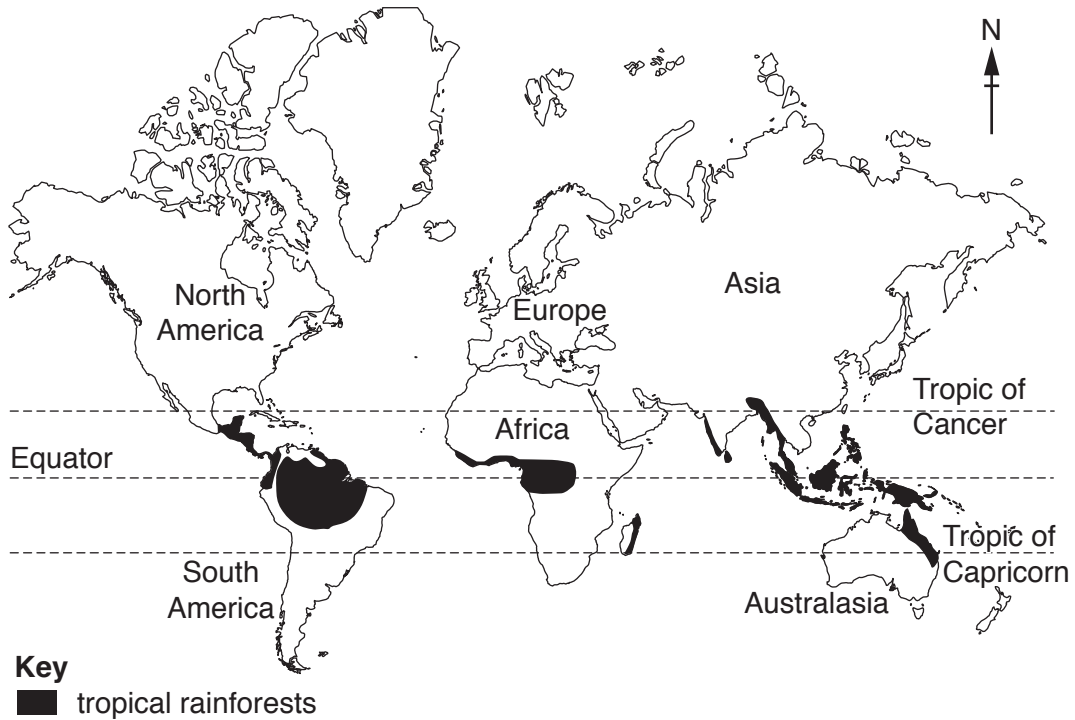
(ii) Calculate how much more of the Earth's land surface is covered by the taiga biome than the tundra biome.

.....% [1]

(iii) Calculate the total percentage of the Earth's land surface covered by the taiga, temperate forest and tropical rainforest combined.

.....% [1]

The map shows the distribution of tropical rainforest.



(b) Describe the distribution of tropical rainforest as shown on the map.

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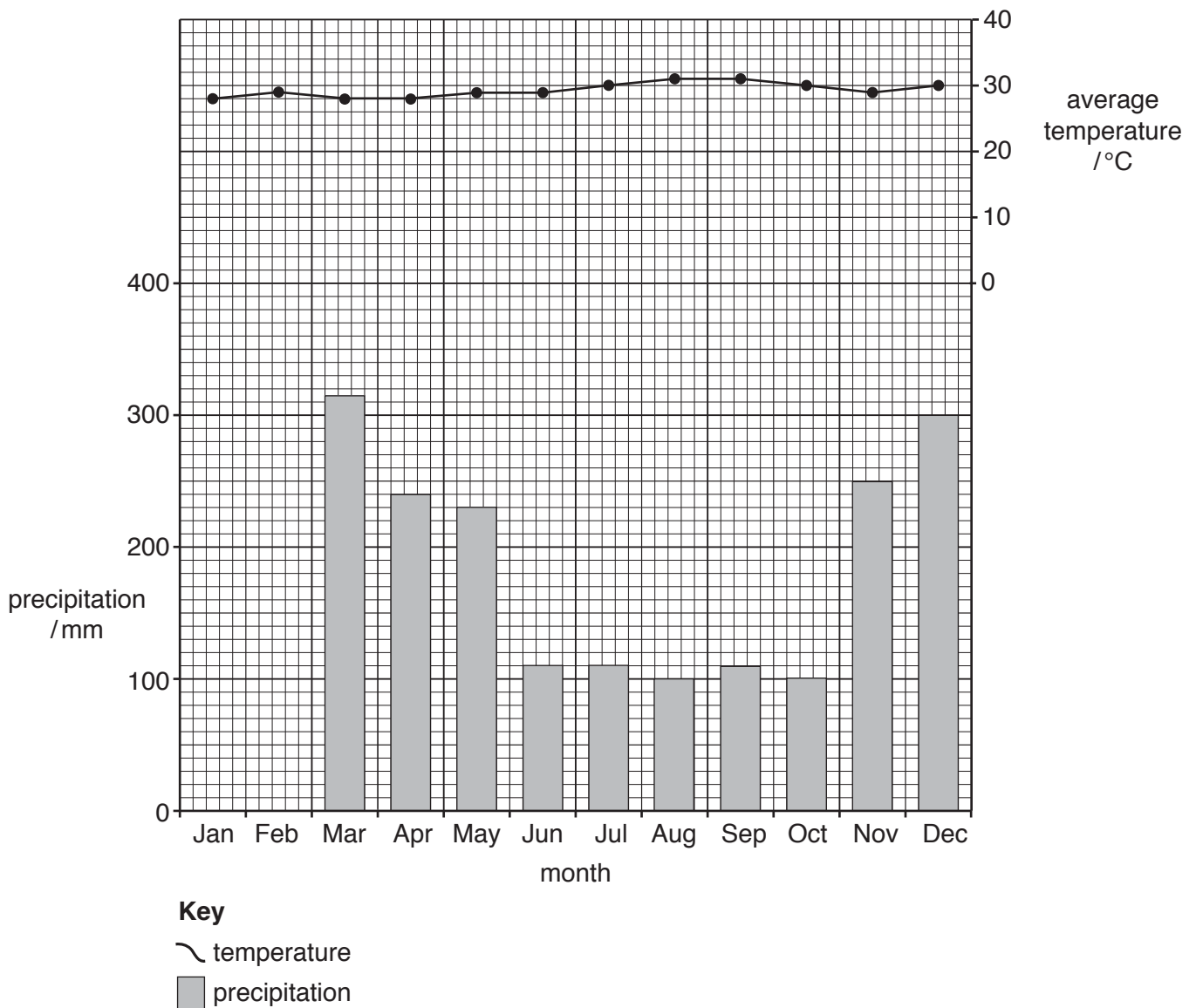
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.....[3]

(c) The graph and table show climate information for a weather station in Brazil which has an equatorial climate.

(i) Using the information in the table, complete the rainfall graph for January and February. [2]

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
average temperature /°C	28	29	28	28	29	29	30	31	31	30	29	30
precipitation /mm	380	310	315	240	230	110	110	100	110	100	250	300



(ii) Using the climate graph and the information in the table, describe the pattern of rainfall throughout the year.

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.....[2]

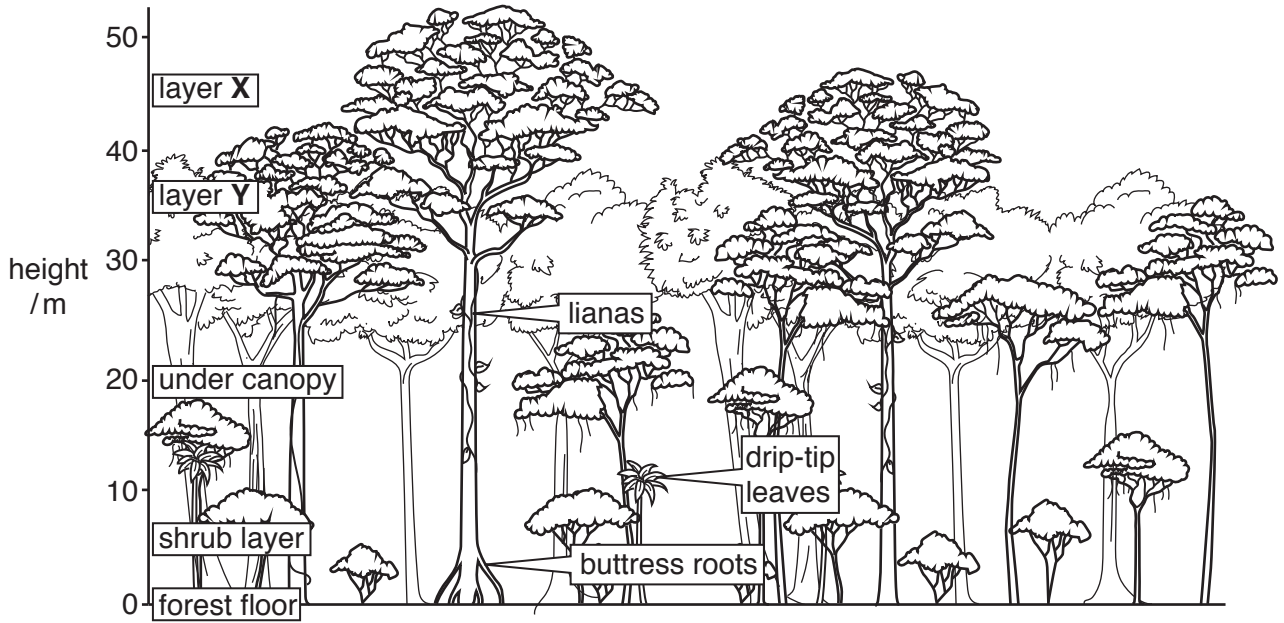
(iii) State a month with the highest average temperature.

.....[1]

(iv) Calculate the annual average temperature range.

.....°C [1]

(d) The diagram shows the layers of the tropical rainforest vegetation.



(i) State the name of the layer at:

X .....

Y .....

[2]

(ii) Estimate the height of the tallest tree shown in the diagram.

.....m [1]

(iii) Explain why rainforest trees have:

buttress roots

.....  
 .....  
 .....

drip-tip leaves.

.....  
 .....  
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[4]

(e) Many areas of tropical rainforest are being cleared.

State **three** causes of deforestation in tropical rainforests.

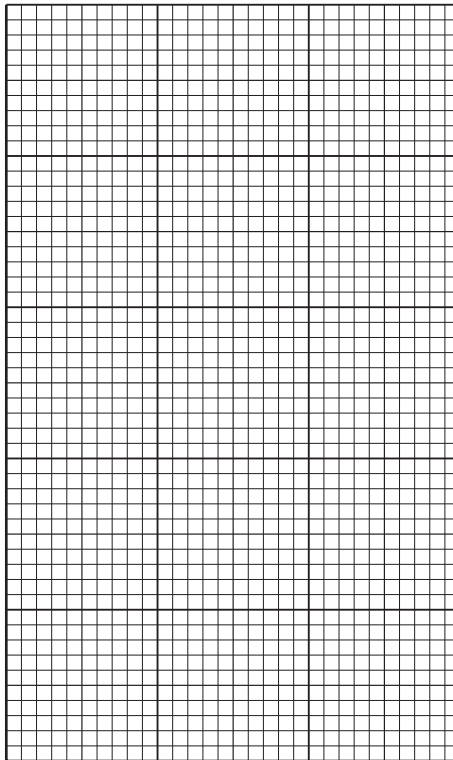
- 1 .....
- 2 .....
- 3 .....

[3]

(f) The table shows information about rainforests in Borneo.

year	percentage of land covered by rainforest
2010	44
2020 (predicted)	33

(i) Draw a bar graph to show this information.



[3]

(ii) Calculate the predicted decrease in the percentage of land covered by rainforest in Borneo between 2010 and 2020.

.....[1]

(iii) Suggest the impacts on local people of deforestation of the tropical rainforest.

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.....[4]

(g) Sustainable harvesting of hardwood trees can be a solution to tropical rainforest destruction. Do you agree or disagree with this statement? Give reasons for your answer.

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.....[4]





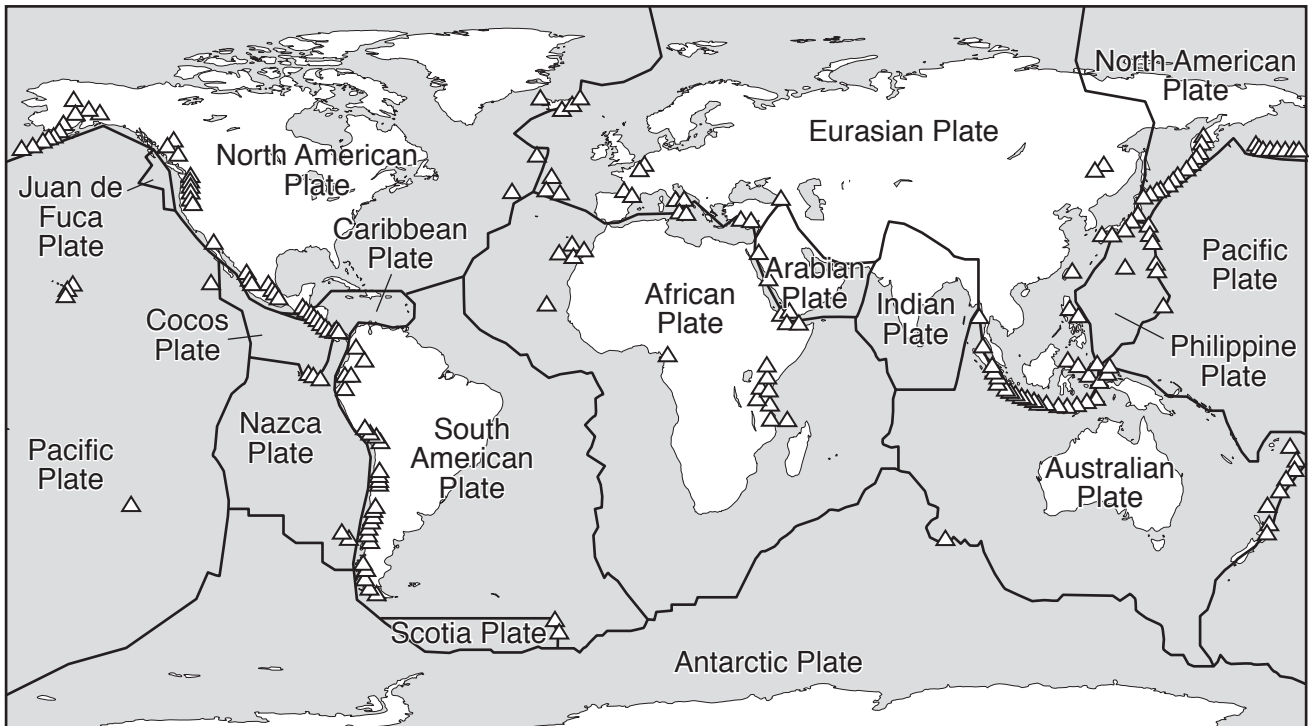
2 (a) Read the passage. Write the correct word in the spaces from the list to complete the passage.

**core          crust          plates**

The outer layer of the Earth is called the ..... This layer is divided into large sections called ..... Below this layer is the mantle which is made up of semi-molten rocks. The central part of the Earth is divided into the inner and outer .....

[2]

(b) The map shows the global distribution of volcanoes.



**Key**  
 ~ plate boundary  
 △ volcano

Describe the distribution of volcanoes as shown on the map.

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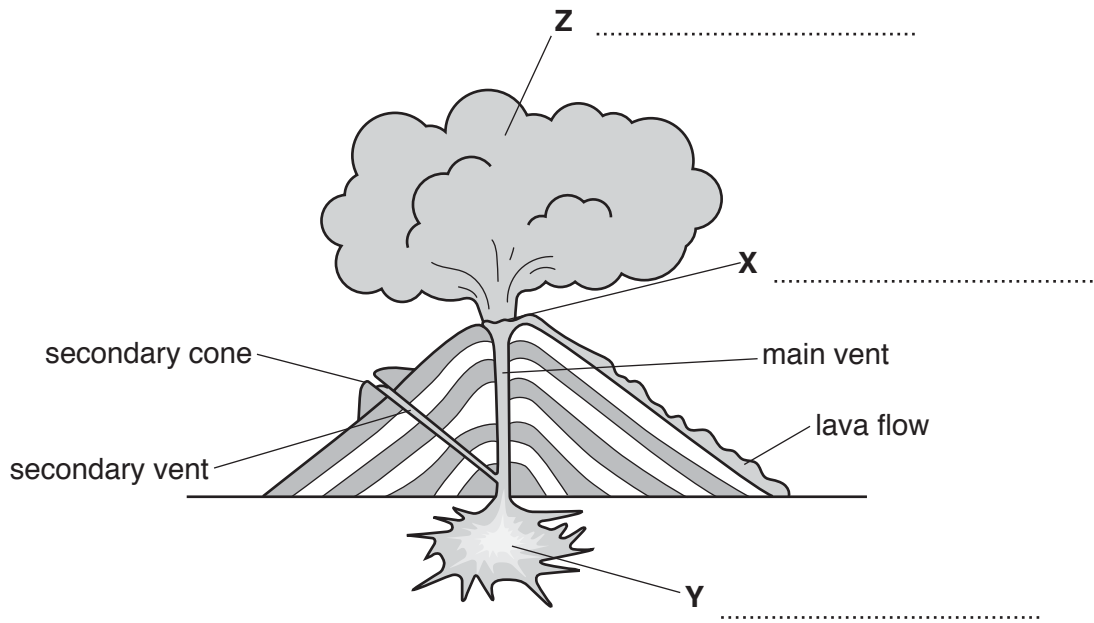
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[3]

(c) The diagram shows features of a type of volcano.

(i) Complete the labels at X, Y and Z to show the features of this volcano.

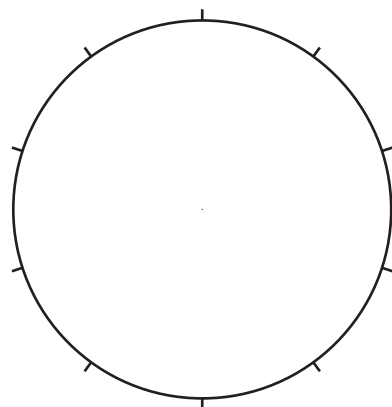
[3]



(ii) The table shows the main causes of death after 10 volcanic eruptions.

Convert the information in the table into percentages and complete the pie graph using the key.

main cause of deaths	number of volcanic eruptions	percentage
ash flows	2	
mud flows	5	
starvation	2	
lava flows	1	



**Key**

-  ash flows
-  mud flows
-  starvation
-  lava flows

[3]

- (iii) Suggest reasons why fewer people are killed during a volcanic eruption than during an earthquake.

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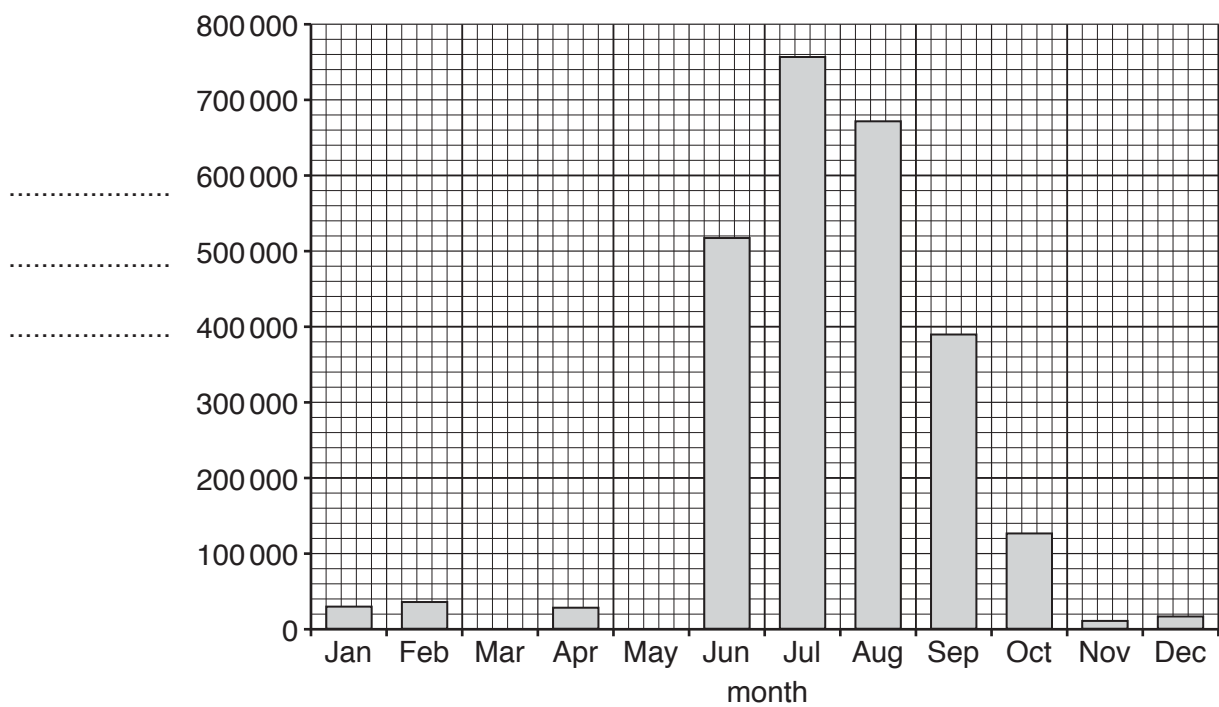
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.....[4]

- (d) Yellowstone National Park is famous for wildlife and volcanic activity. The graph shows average visitor numbers per month to Yellowstone National Park.



- (i) Complete the bar graph by plotting the following information and labelling the y-axis:

March            20 000 visitors  
 May              200 000 visitors

[3]

- (ii) State which three months have the most visitors.

.....[1]

- (iii) State how many more people visit the park in May than in March.

.....[1]

- (iv) Visitors come to see the wildlife in Yellowstone National Park. The sign shows some information given to visitors.

- Keep a safe distance from wildlife (at least 90 m from bears and wolves)
- Do not feed the animals
- Use binoculars to view the animals



Suggest how this information protects both visitors and wildlife.

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[4]

(e) (i) Geothermal power can be generated in volcanic regions.

Describe **three** advantages of using geothermal power compared to other energy sources.

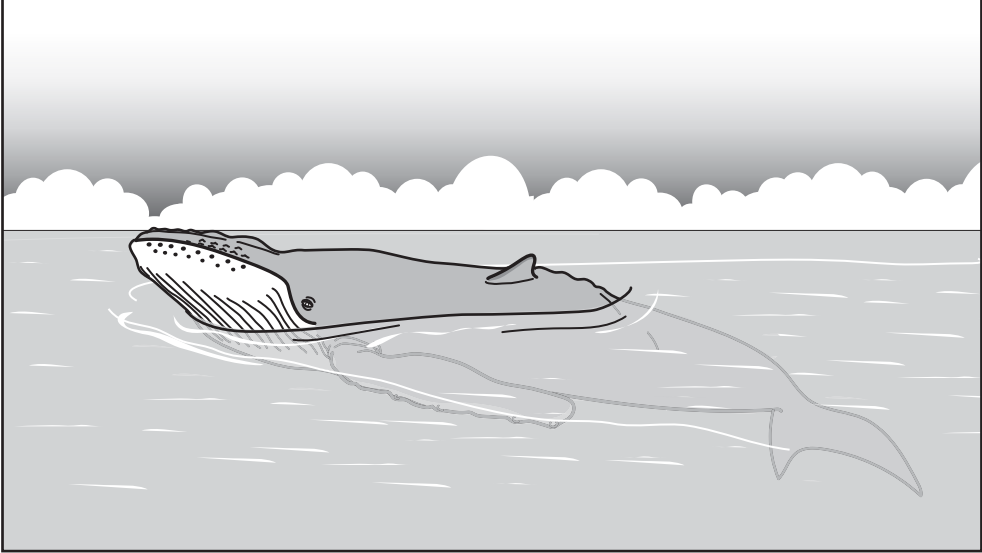
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(ii) Other than for tourism and geothermal energy, suggest why people continue to live in regions with volcanic activity.

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.....[3]

(f) The following information is about whale watching.

- 13 million people took part in whale watching tours in 2008 in 119 countries
- This created an income of 2.1 billion US dollars
- 13,200 people were employed in over 3,000 tour companies
- Whale watching is set to increase by 10% each year



(i) State what is meant by the term *ecotourism*.

.....  
.....[1]

(ii) State **two** benefits of whale watching stated in the information.

1 .....

2 ..... [2]

(iii) Suggest how whale watching helps to conserve the whales.

.....  
.....[1]

