Cambridge IGCSE

Cambridge International Examinations
Cambridge International General Certificate of Secondary Education

CANDIDATE NAME									
CENTRE NUMBER						CANDIDATE NUMBER				

7878518717

GEOGRAPHY **0460/43**

Paper 4 Alternative to Coursework **May/June 2017**

1 hour 30 minutes

Candidates answer on the Question Paper.

Additional Materials: Ruler
Calculator
Protractor

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 this booklet. The question number(s) must be clearly shown.

Answer **all** questions.

The Insert contains Figs. 1 and 3, Photographs A and B and Table 2 for Question 1, and Fig. 5, Photograph C and Tables 5 and 6 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.

The 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.

DC (KN/SW) 131789/4

CAMBRIDGE International Examinations

[Turn over

BLANK PAGE

1 Students at a school in south west England did fieldwork on a river which flows from Dartmoor (an upland area). The river and the five fieldwork sites are shown on Fig. 1 (Insert).

(a) Which **two** river features are labelled **A** and **B** on Fig. 1?

Choose from the following:

confluence delta flood plain source tributary

Feature **A** .....

Feature **B** ..... [2]

The students agreed to investigate the following hypotheses:

Hypothesis 1: *The river becomes wider and deeper downstream.*

Hypothesis 2: *The bedload becomes more rounded downstream.*

(b) Before they went to do their fieldwork the students did a pilot study at a site on a local stream. Suggest **two** advantages of doing a pilot study.

1 .....

.....

2 .....

.....[2]

(c) To investigate **Hypothesis 1**, the students measured the width of the river channel and the depth of the river at points across the channel. Photographs A and B (Insert) show the students doing their fieldwork.

Describe how the students made their measurements.

width of river channel

.....

.....

.....

.....

depth of river

.....

.....

.....

.....[4]

(d) The results of the students' fieldwork at site 3 are shown in Table 1 below.

Table 1

Students' measurements at site 3

Distance across channel / width (metres)	Depth (m)
0.4	0.15
1.7	0.40
2.9	**0.50**
4.2	**0.35**
5.4	0.10

(i) Use these results to **complete and shade in the cross section** of the river channel at site 3 on Fig. 2 opposite. [2]

(ii) Which site on Fig. 2 shows a meander?

Site ..... [1]

(iii) What conclusion would the students make about **Hypothesis 1**: *The river becomes wider and deeper downstream*? Support your answer with data from Fig. 2.

.....

.....

.....

.....

.....

.....[3]

Cross sections of the river channel

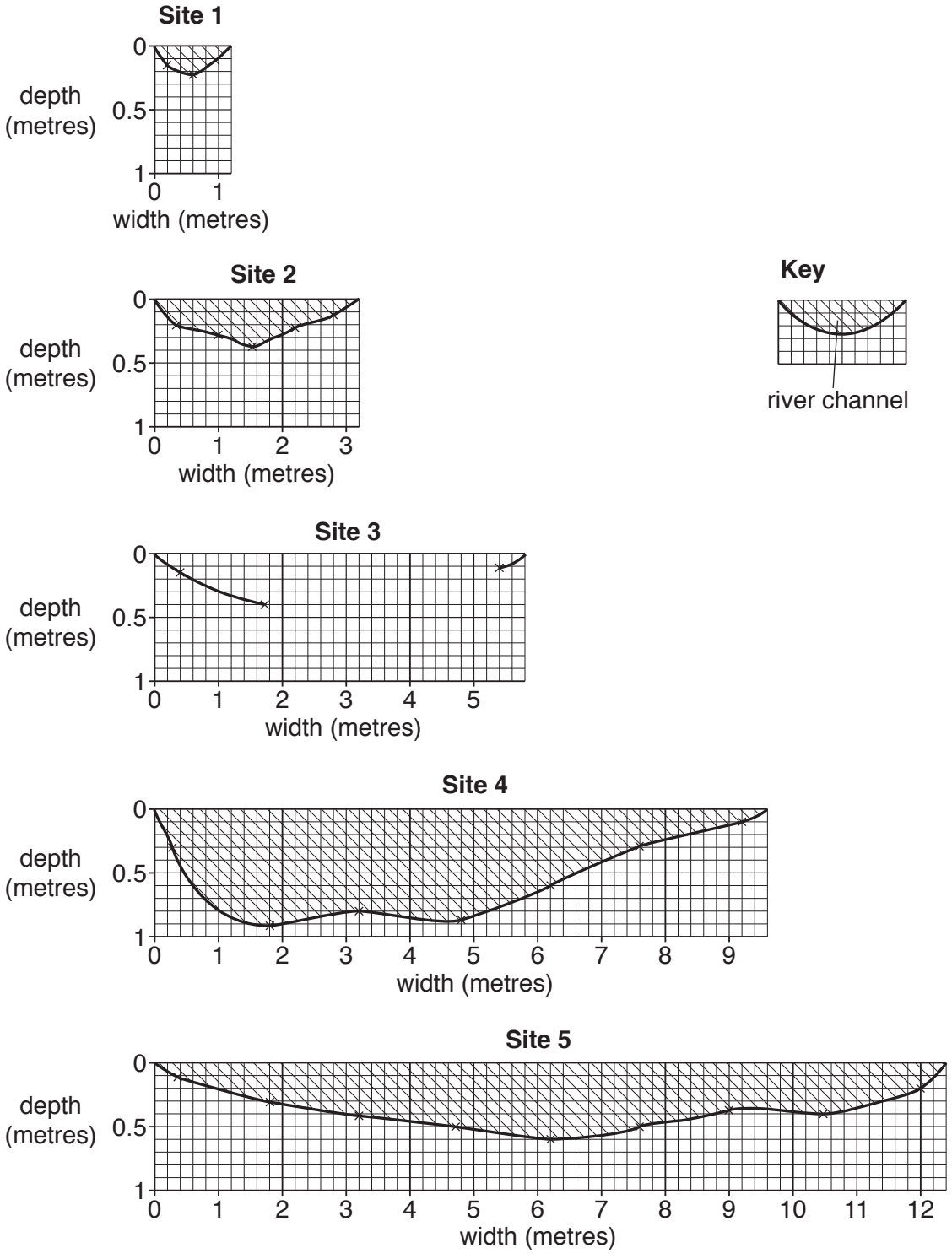

Fig. 2

[Turn over

(e) To investigate **Hypothesis 2**: *The bedload becomes more rounded downstream*, the students selected 20 pebbles at random from the bed of the river at each site. They then measured the roundness of the pebbles by comparing them with the Power's Scale of Roundness which is shown in Fig. 3 (Insert).

(i) Suggest **one** problem of using the Power's scale to measure roundness.

.....

.....[1]

(ii) Suggest **two** weaknesses of selecting pebbles at random.

1 .....

.....

2 .....

.....[2]

(iii) The students' results are shown in Table 2 (Insert). Use these results to **complete the divided bar graph** for site 2 in Fig. 4 below. [3]

Students' results of measuring pebble roundness

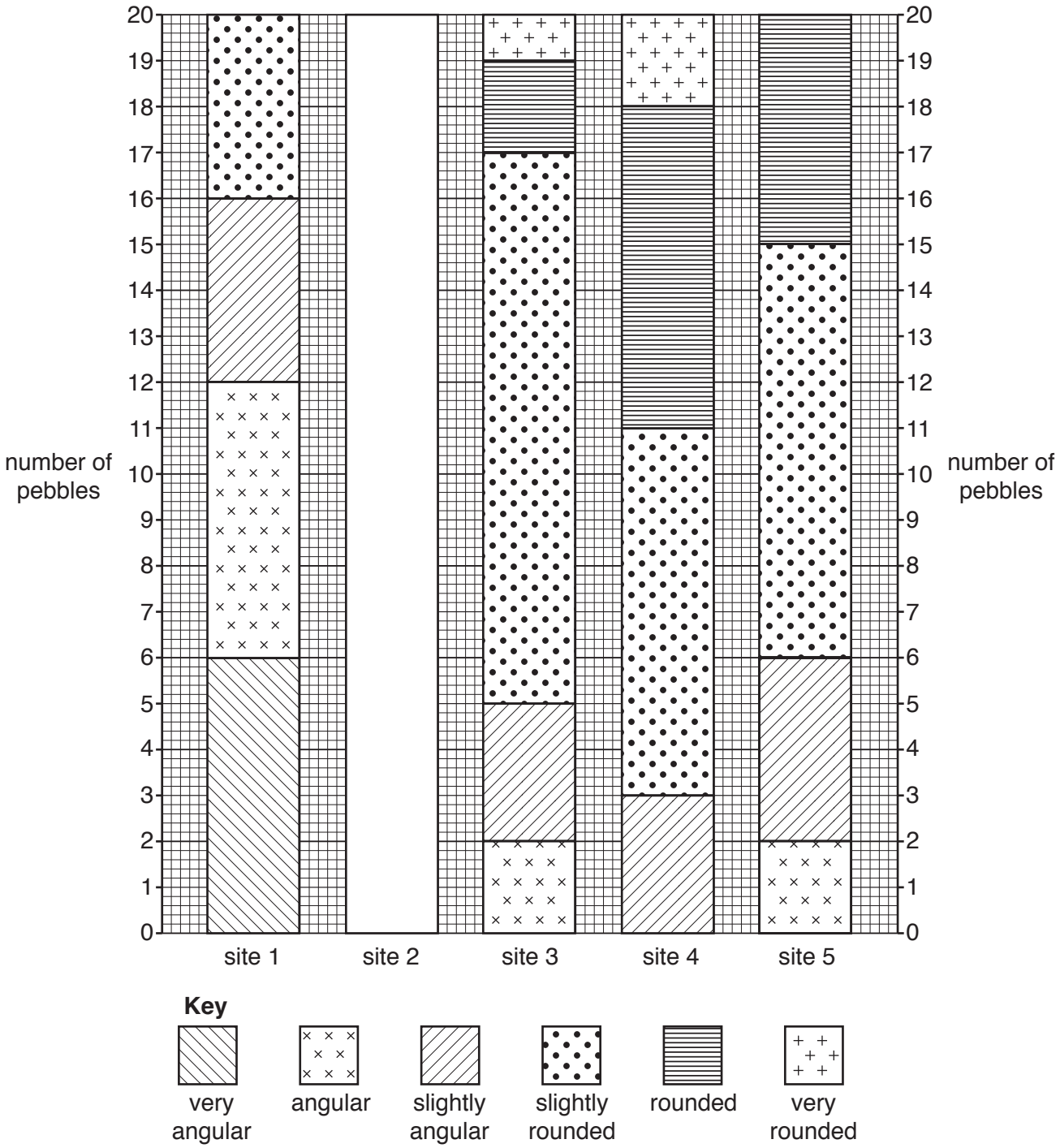

Fig. 4

(iv) One student gave a score to each category in the Power's Scale. He then multiplied this score by the number of pebbles in the category (shown in Table 2). The results of his work are shown in Table 3 below.

Calculate the results for site 4 to **complete the table**. [1]

Table 3

Site	Score given to each description						
	very angular (score = 6)	angular (score = 5)	slightly angular (score = 4)	slightly rounded (score = 3)	rounded (score = 2)	very rounded (score = 1)	Total score
1	36	30	16	12	0	0	94
2	54	20	24	3	0	0	101
3	0	10	12	36	4	1	63
4							52
5	0	10	16	27	10	0	63

(v) The students decided that **Hypothesis 2**: *The bedload becomes more rounded downstream* was partly true. Use evidence from Fig. 4 and Tables 2 and 3 to explain why they reached this conclusion.

.....

.....

.....

.....

.....

.....[3]

(vi) Explain why pebbles (bedload) generally become more rounded downstream.

.....

.....

.....

.....[2]

(f) To extend their study some students decided to measure the **size** of pebbles in the bedload to see if they varied downstream.

(i) Which **one** of the following pieces of equipment in the table below could the students use to measure the size of each pebble?

Tick (✓) your choice. [1]

Equipment	Tick (✓)
callipers	
clinometer	
flowmeter	
quadrat	
stopwatch	

(ii) Explain how the students would carry out fieldwork to investigate if the size of pebbles varied downstream. Include reference to how the students could make their method reliable.

.....

.....

.....

.....

.....

.....

.....

.....[3]

[Total: 30 marks]

2 A group of students carried out fieldwork about tourism in Bagan, a city which is a major tourist destination in Myanmar. Photograph C (Insert) shows a view of part of the city.

They decided to test the following hypotheses:

Hypothesis 1: *More tourists come to Bagan from Asia than from other parts of the world.*

Hypothesis 2: *People in different age groups come to visit Bagan for different reasons.*

(a) To test their hypotheses the students produced a questionnaire which they used to obtain 100 responses. The questionnaire is shown in Fig. 5 (Insert).

(i) Why did the students first ask 'Are you a tourist in Bagan?'

.....

.....

.....

.....[2]

(ii) The students used a sampling method of asking every tenth person they met to complete the questionnaire. What is this method of sampling called?

..... [1]

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

1 .....

.....

2 .....

.....[2]

(b) Students showed the results of Question 2 (*Which country do you come from?*) on the map, Fig. 6, below.

(i) **Plot** the information in Table 4 below onto Fig. 6. [2]

Table 4

Which country do you come from?

Country	Number of tourists
China	16
USA	10

Countries which tourists to Bagan come from

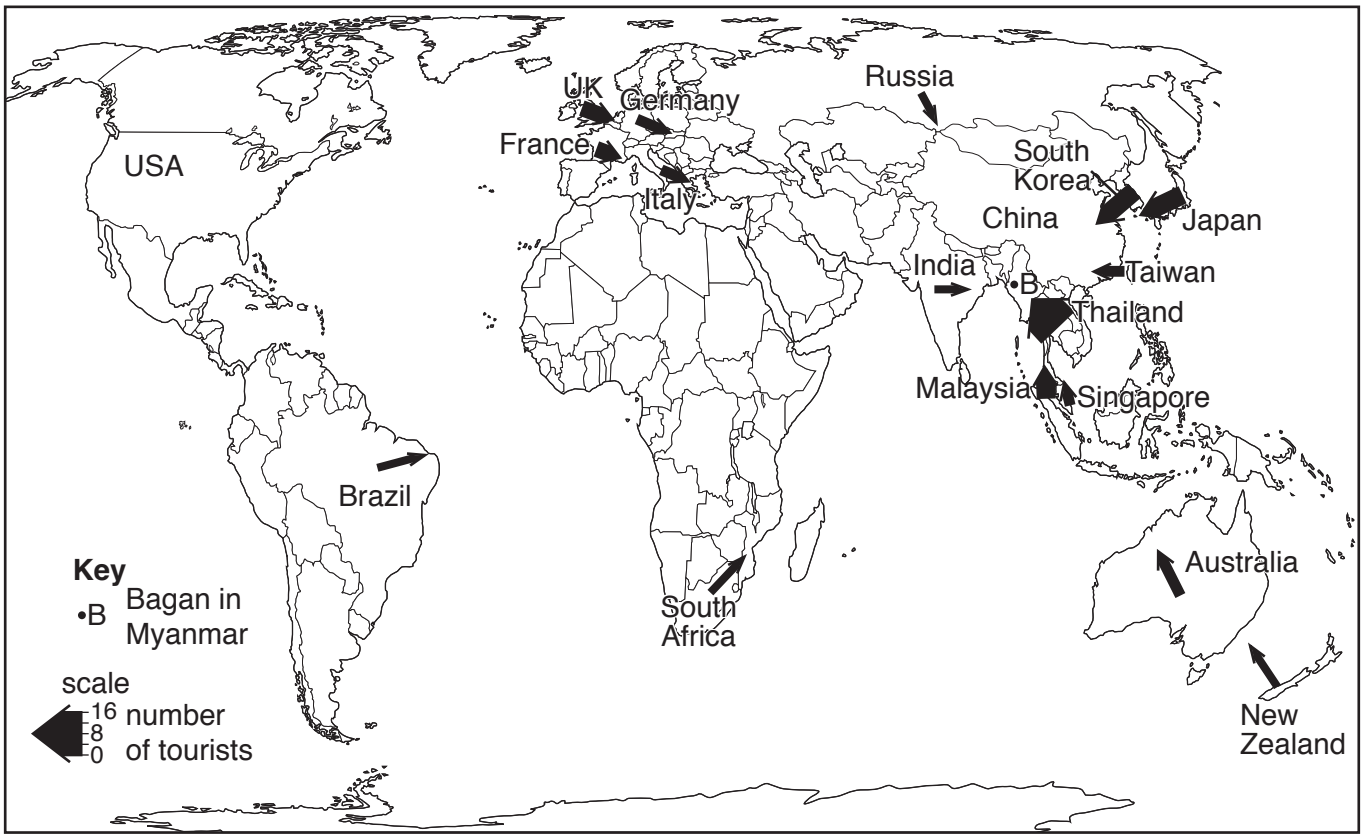

Fig. 6

(ii) One student showed the results of Question 2 as two bar graphs which are shown in Fig. 7 below.

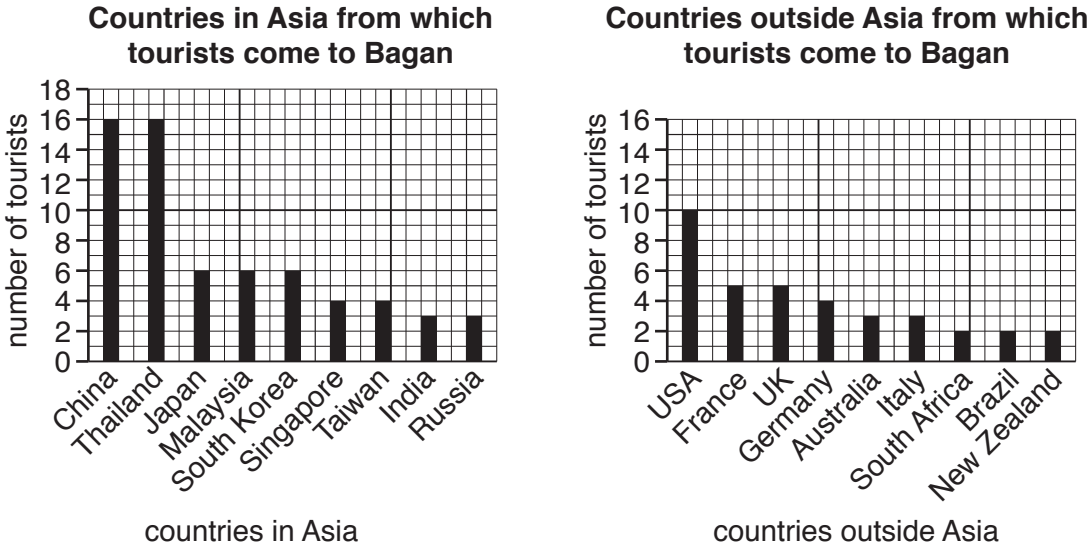

Fig. 7

Give **one** advantage of each method for showing this data.

Map (Fig. 6)

.....

.....

Bar graphs (Fig. 7)

.....

.....[2]

(iii) What conclusion would the students make to **Hypothesis 1**: *More tourists come to Bagan from Asia than from other parts of the world*? Support your decision with evidence from Figs. 6 and 7.

.....

.....

.....

.....

.....

.....[3]

(c) The results of Question 3 (*Which one of the following most attracted you to visit Bagan?*) and Question 4 (*Which age group are you in?*) are shown in Table 5 (Insert).

(i) Use the results to **plot the bar graph** for the age group over 60 on Fig. 8, below. [2]

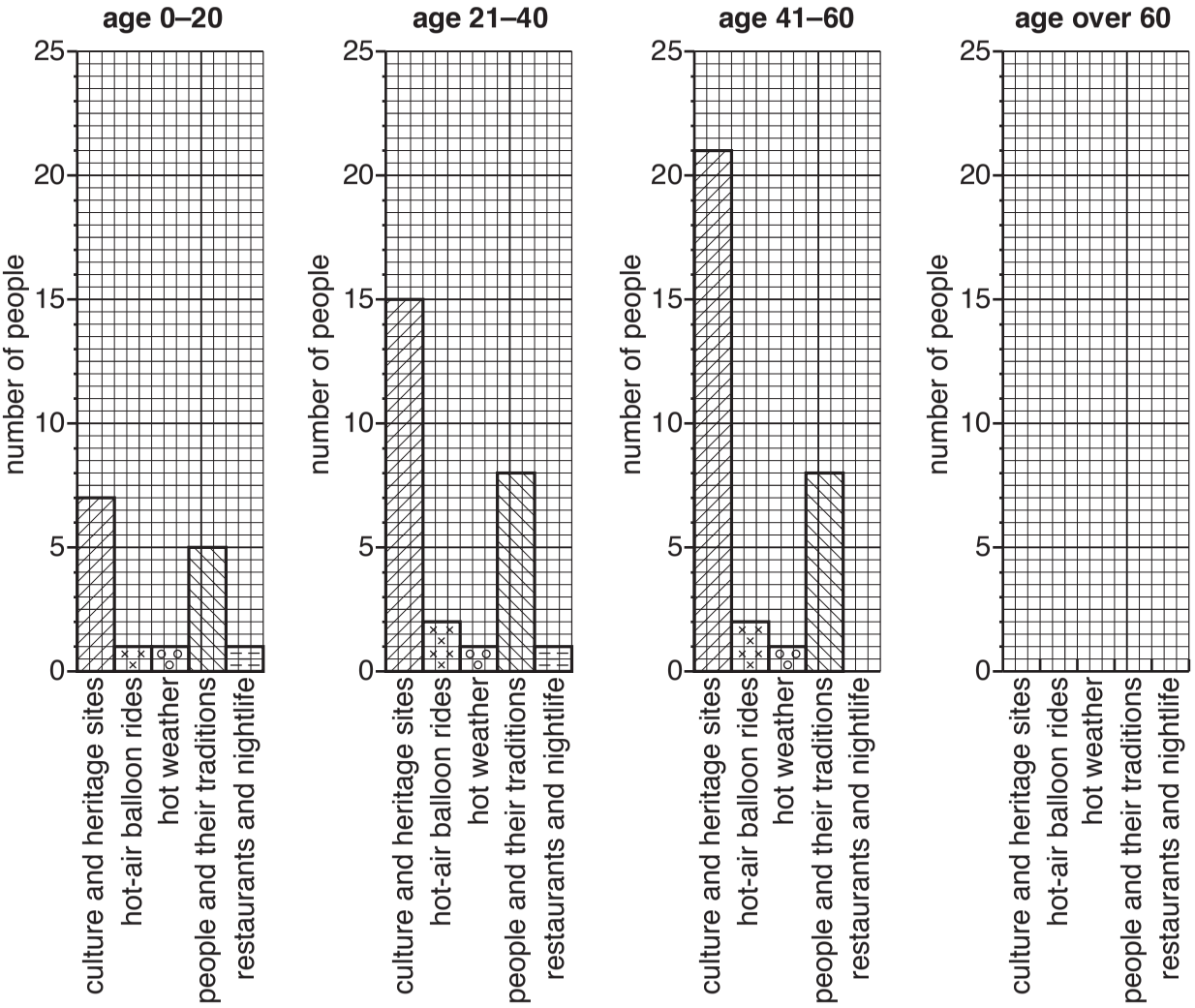

Fig. 8

(ii) Do these results support **Hypothesis 2**: *People in different age groups come to visit Bagan for different reasons*? Support your conclusion with evidence from Table 5 and Fig. 8.

.....

.....

.....

.....

.....

.....

.....

.....[4]

(d) Students who were studying travel and tourism wanted to find out if tourists from different countries used different methods to research their holidays. They used the results of Question 5 (*Which one of the following methods did you mainly use to research your holiday?*) to produce Table 6 (Insert) which shows the results for four countries.

(i) Use the results in Table 6 to **complete the pie graph** for Thailand in Fig. 9 opposite. [2]

(ii) Identify **two** major differences between the research methods tourists used in China and Japan.

1 .....

.....

2 .....

.....[2]

Holiday research methods in four countries

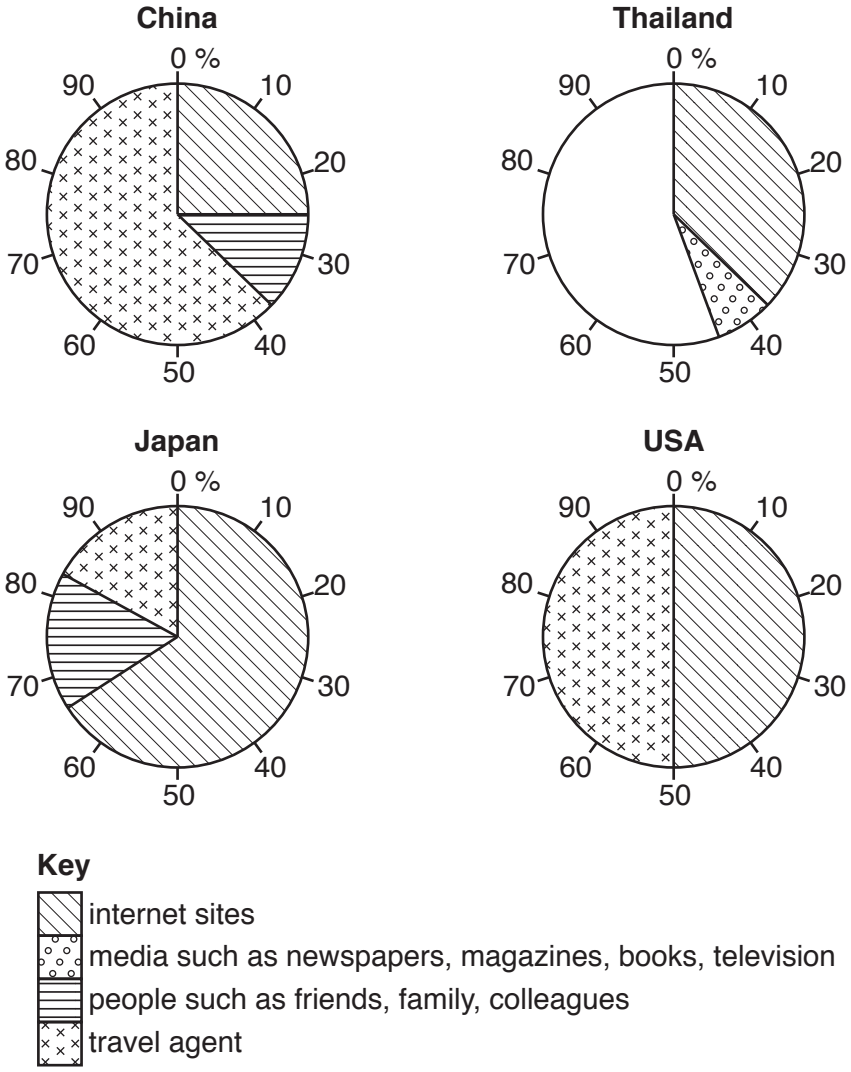

Fig. 9

(e) (i) Describe advantages and disadvantages of tourism for local people in an area such as Bagan.

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....[5]

(ii) To extend their fieldwork the geography students wanted to investigate if tourism in Bagan had a negative impact on the natural environment.

Describe a suitable task to carry out this investigation. Do **not** refer to a questionnaire in your answer.

.....

.....

.....

.....

.....

.....

.....

.....[3]

[Total: 30 marks]

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.

BLANK PAGE

BLANK PAGE