cea
Rewarding Learning

ADVANCED SUBSIDIARY (AS)
General Certificate of Education
2009

Geography

Assessment Unit AS 3

assessing

Module 3: Techniques in Geography

[ASG31]

ASG31

FRIDAY 5 JUNE, MORNING

1 hour.

Write your Centre Number and Candidate Number in the spaces
provided at the top of this page.
Write your answers in the spaces provided in this question paper.
Answer **both** questions.
At the conclusion of this examination attach your fieldwork report and
table of data securely to this paper using the treasury tag supplied.
There are two pages at the back of this question and answer booklet
for use as continuation sheets as required.
You are provided with an OS map extract for use with question **2(b)**.
Do not write your answers on this insert.

The total mark for this paper is 60.
Quality of written communication will be assessed in **all** questions.
Figures in brackets printed down the right-hand side of pages indicate
the marks awarded to each question or part question.

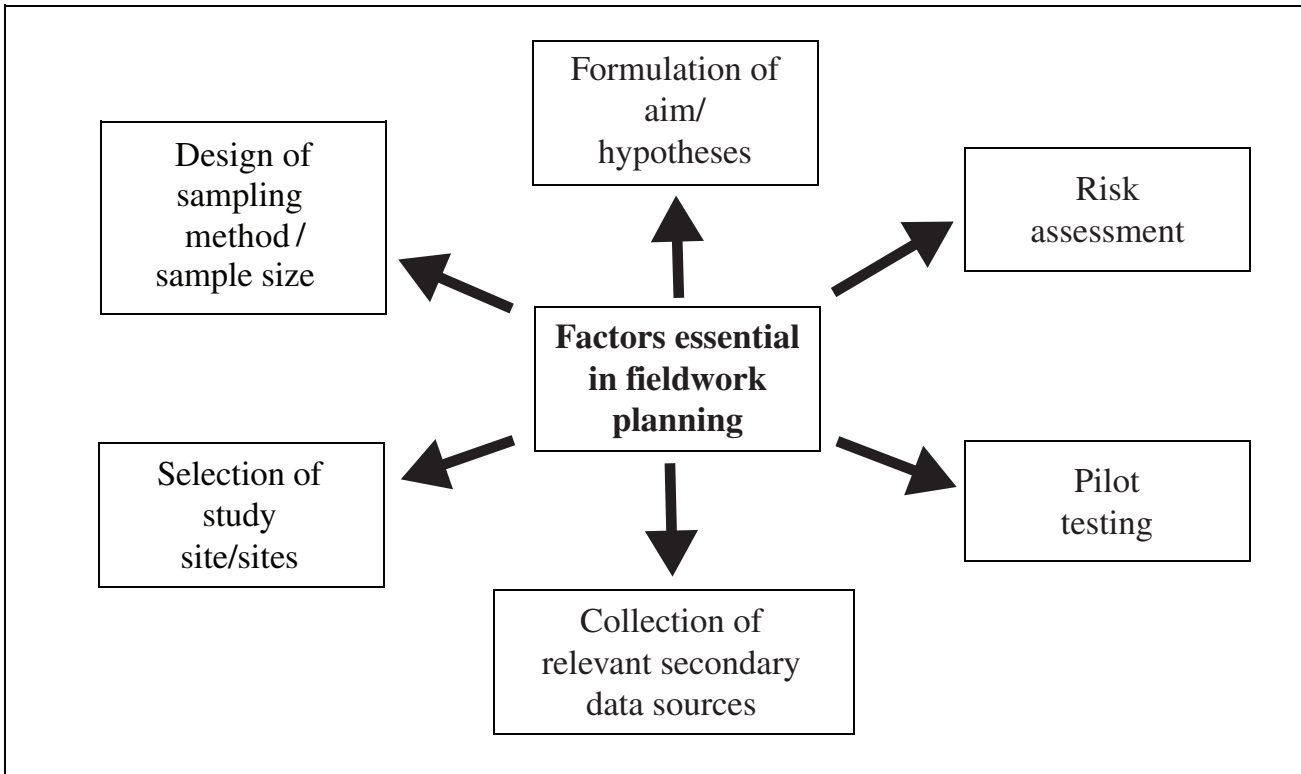| For Examiner's use only	
Question Number	**Marks**
Report	
Table	
1	
2	
Total Marks	

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Submitted fieldwork report and table of data. [10]

At the end of the examination these should be attached securely to this paper using the treasury tag supplied.

1 (a) Select **two** factors from **Resource 1** below and explain their importance in **your fieldwork** planning.

Resource 1

```
                    ┌─────────────────┐
                    │ Formulation of  │
                    │     aim/        │
                    │   hypotheses    │
                    └─────────────────┘
┌──────────────┐           ↑            ┌──────────────┐
│  Design of   │           │            │     Risk     │
│  sampling    │ ←─────┐    │    ┌─────→ │  assessment  │
│  method /    │       │  ┌─┴──┐ │       └──────────────┘
│ sample size  │       └──│Factors essential│
└──────────────┘          │in fieldwork │
                          │  planning   │
┌──────────────┐    ┌─────│             │─────┐  ┌──────────────┐
│ Selection of │ ←──┘     └──────┬──────┘     └→ │    Pilot     │
│    study     │                 │               │   testing    │
│  site/sites  │                 ↓               └──────────────┘
└──────────────┘        ┌─────────────────┐
                        │  Collection of  │
                        │relevant secondary│
                        │  data sources   │
                        └─────────────────┘
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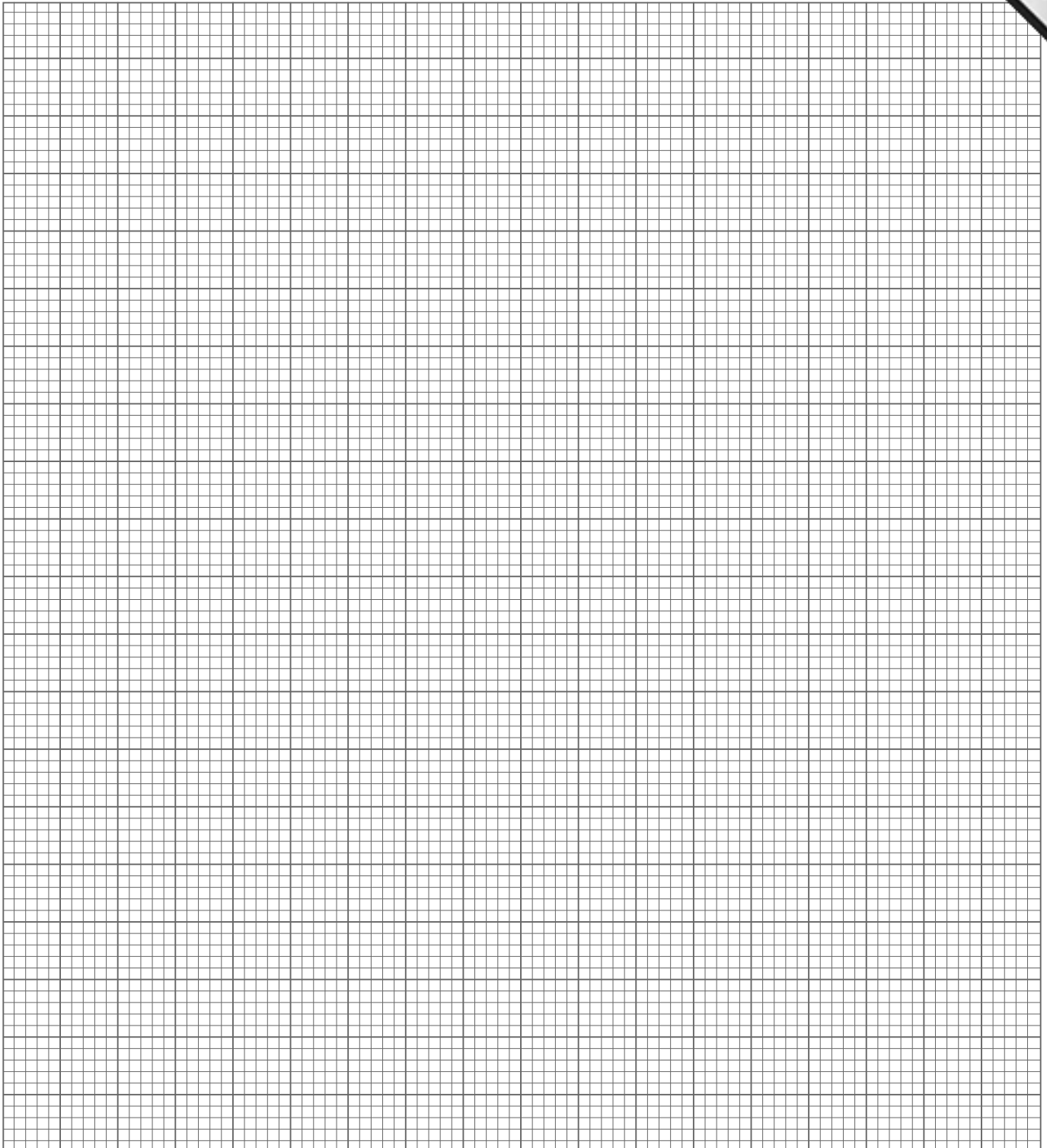
Factor 1:

_____

_____

_____

_____

_____

_____ [3]

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2

Factor 2:

_____

_____

_____

_____

_____

_____ [3]

(b) (i) Select an appropriate graphical technique to present data from your _____. graph must be relevant to the stated aim of your investigation.

Title of Graph: _____

Examiner Only	
Marks	**Remark**

[7]

4

(ii) With reference to relevant geographical theory, describe and explain your graph in relation to the aim of your fieldwork.

_____

_____

_____

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_____

_____ [6]

(c) State **one** statistical technique which could be used to investigate your aim and explain why it is appropriate for your fieldwork.

Statistical technique: _____ [no mark]

_____

_____

_____

_____

_____

_____ [3]

(d) Explain, with reference to your fieldwork, why **evaluation** is an essential part of the investigation process.

_____

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_____

_____ [3]
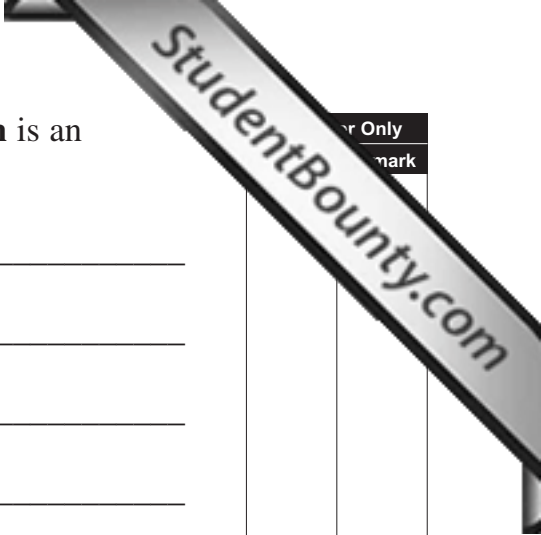
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(Questions continue overleaf)

2 **(a)** Study **Resource 2A** which relates to an investigation of altitude and me͟͟͟͟temperature for 20 weather stations in North America. **Resource 2B** is a m͟͟͟͟America which illustrates the location of these selected weather stations.

Resource 2A

| Weather Station	X Altitude (m)	Rank X	Y Mean Annual Temperature °C	Rank Y	d	d²
1	1872	2	6.7	15.5	–13.5	182.25
2	95	10	16.7	5	5	25
3	8	17	23.9	1	16	256
4	167	7	15	8	–1	1
5	30	15	6.7	15.5	–0.5	0.25
6	61	12	18.3	4	8	64
7	2	20	20.6	2	18	324
8	200	6	–5.6	20	–14	196
9	116	8	7.2	14	–6	36
10	575	4	1.1	18	–14	196
11	3	18.5	15.6	6.5		
12	96	9	8.3	13	–4	16
13	1903	1	3.3	17	–16	256
14	70	11	10	11	0	0
15	38	13.5	10	11	2.5	6.25
16	3	18.5	18.9	3	15.5	240.25
17	251	5	10	11	–6	36
18	21	16	15.6	6.5	9.5	90.25
19	38	13.5	11.1	9	4.5	20.25
20	698	3	–0.6	19	–16	256

$$\Sigma\ d^2 = 2345.5$$

$$r_s = -0.76$$

Examiner Only	
Marks	Remark

(i) Complete the table (**Resource 2A**) by inserting the missing values.

[2]

Resource 2B

North
Pacific Ocean

North
Atlantic
Ocean
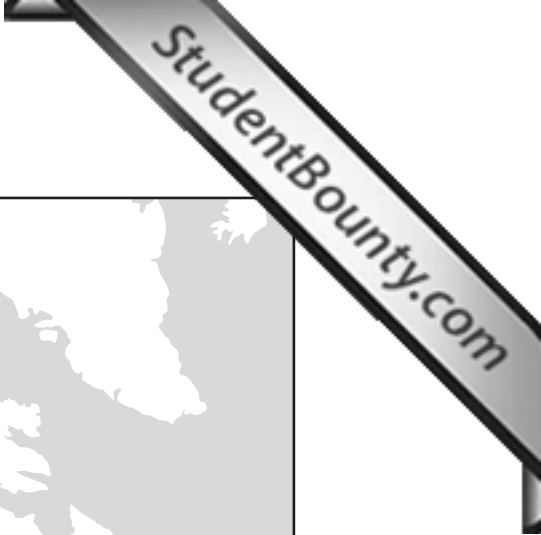
Weather Stations (Key)

1	Cheyenne	11	Norfolk
2	Los Angeles	12	New York
3	Miami	13	Yellowstone Park
4	Nashville	14	Victoria
5	Halifax	15	Boston
6	Montgomery	16	Charleston
7	New Orleans	17	Chicago
8	Yellowknife	18	Sacramento
9	Toronto	19	Seattle
10	Regina	20	Whitehorse

N

1000 km
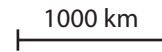
(ii) Explain what the r_s value of **–0.76** means in statistical and geographical terms. (A significance graph and table are presented in **Resource 2C** on page 11.)

Statistical explanation:

_____

_____

_____

_____

_____

_____ [3]

Geographical explanation:

_____

_____

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_____ [3]

(iii) Using evidence from **Resource 2B**, explain **one** other factor (apart from altitude) which may also help explain the variation in mean annual temperatures.
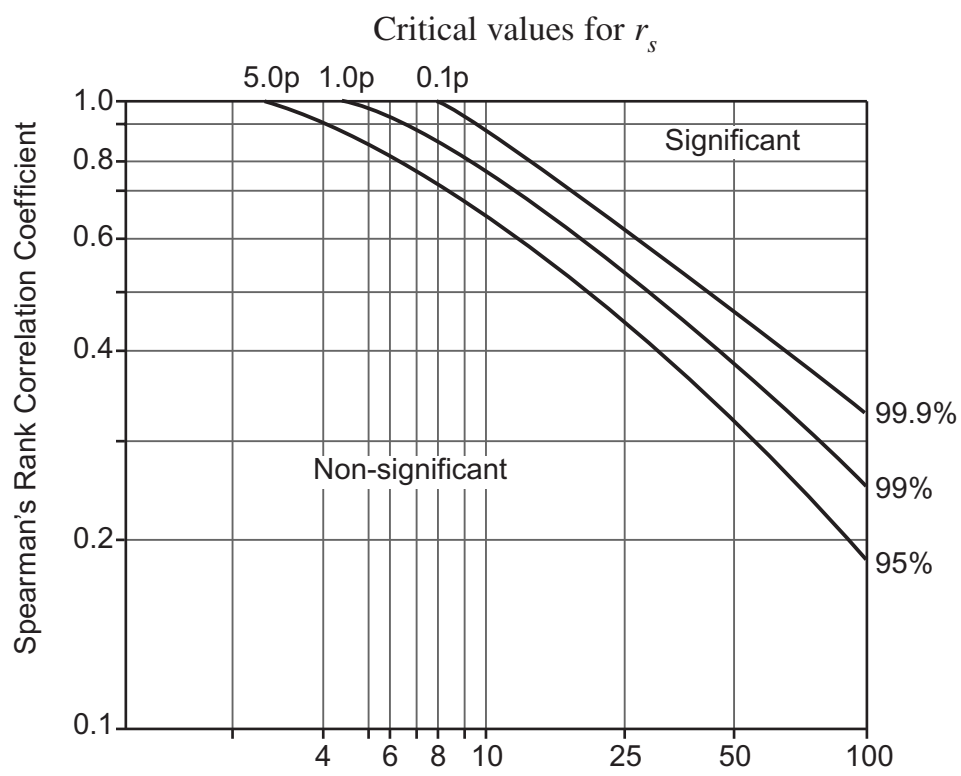
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_____ [3]

Resource 2C

Spearman's Rank Correlation Equation and Significance Charts

Formula: $$r_s = 1 - \left(\frac{6\Sigma d^2}{n^3 - n} \right)$$

where d = the difference in rank of the values of each matched pair
n = the number of ranked pairs
Σ = the sum of

Spearman's Rank Correlation Significance Graph and Table

Critical values for r_s

Degrees of freedom [Number of ranked pairs (n) – 2]

Critical values of Spearman's Rank Correlation Coefficient, r_s

Significance level

degrees of freedom	0.05 (5%)	0.01 (1%)
4	0.88	1.00
5	0.83	0.96
6	0.80	0.91
7	0.77	0.87
8	0.72	0.84
9	0.68	0.80
10	0.64	0.77
11	0.60	0.74
12	0.57	0.71
15	0.50	0.65
18	0.49	0.60
20	0.47	0.59

4673 **[Turn over**

(b) Use the Ordnance Survey map extract of North Yorkshire, **Resource 2D** (see insert sheet), to draw a sketch map representing the area between Eastings 29 and 34 and Northings 91 and 96 in the space below.

On your sketch map, **illustrate** and **label** only the following:

- The course of the River Swale   [2]

- Two named tributaries   [2]

- The ox-bow lake   [1]

- The built-up area of one named village   [1]

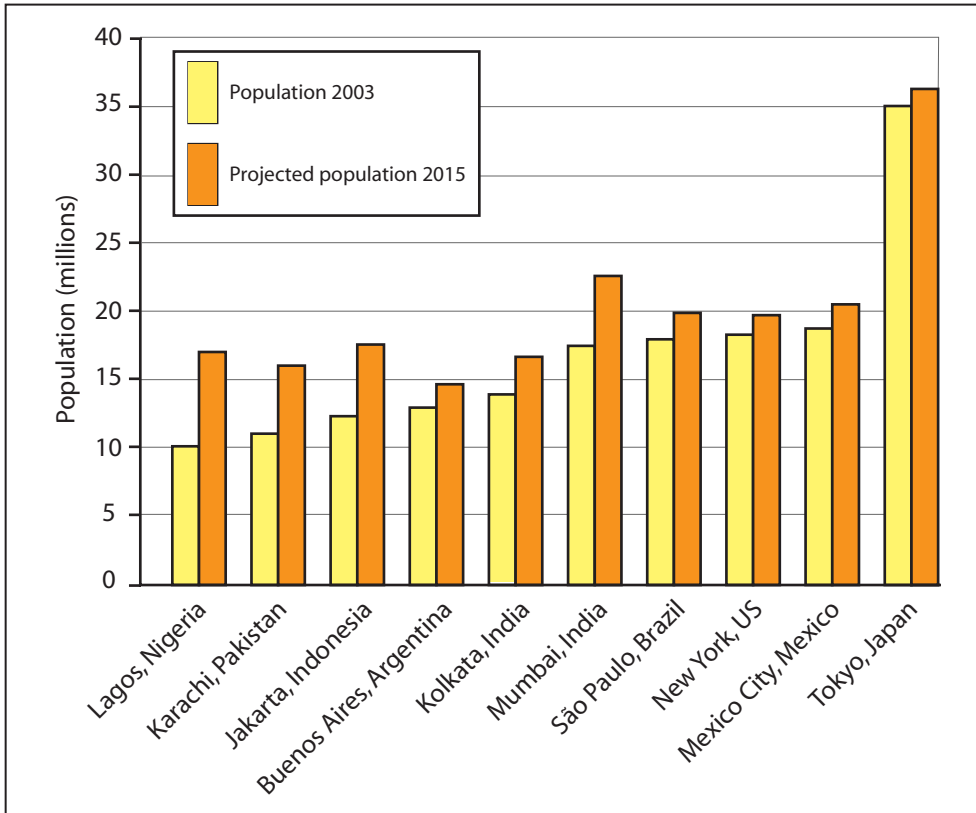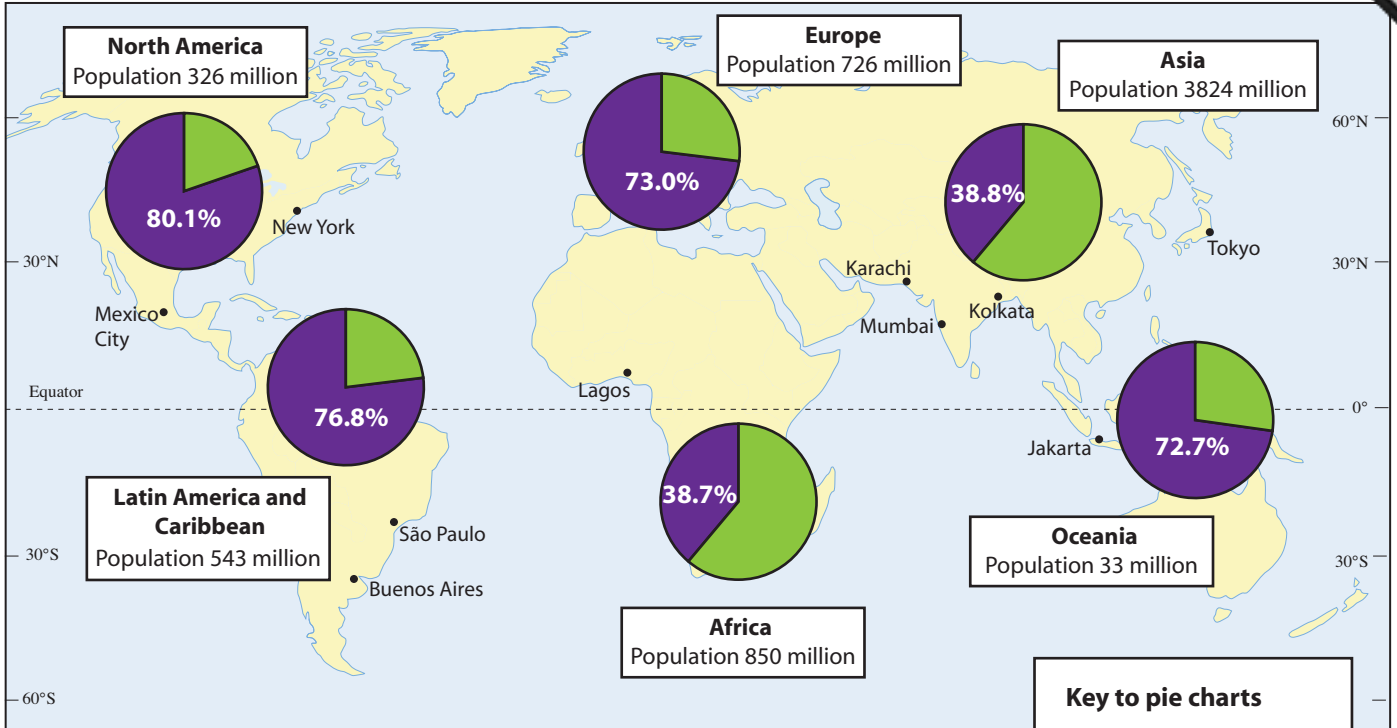- The A684 main road   [1]
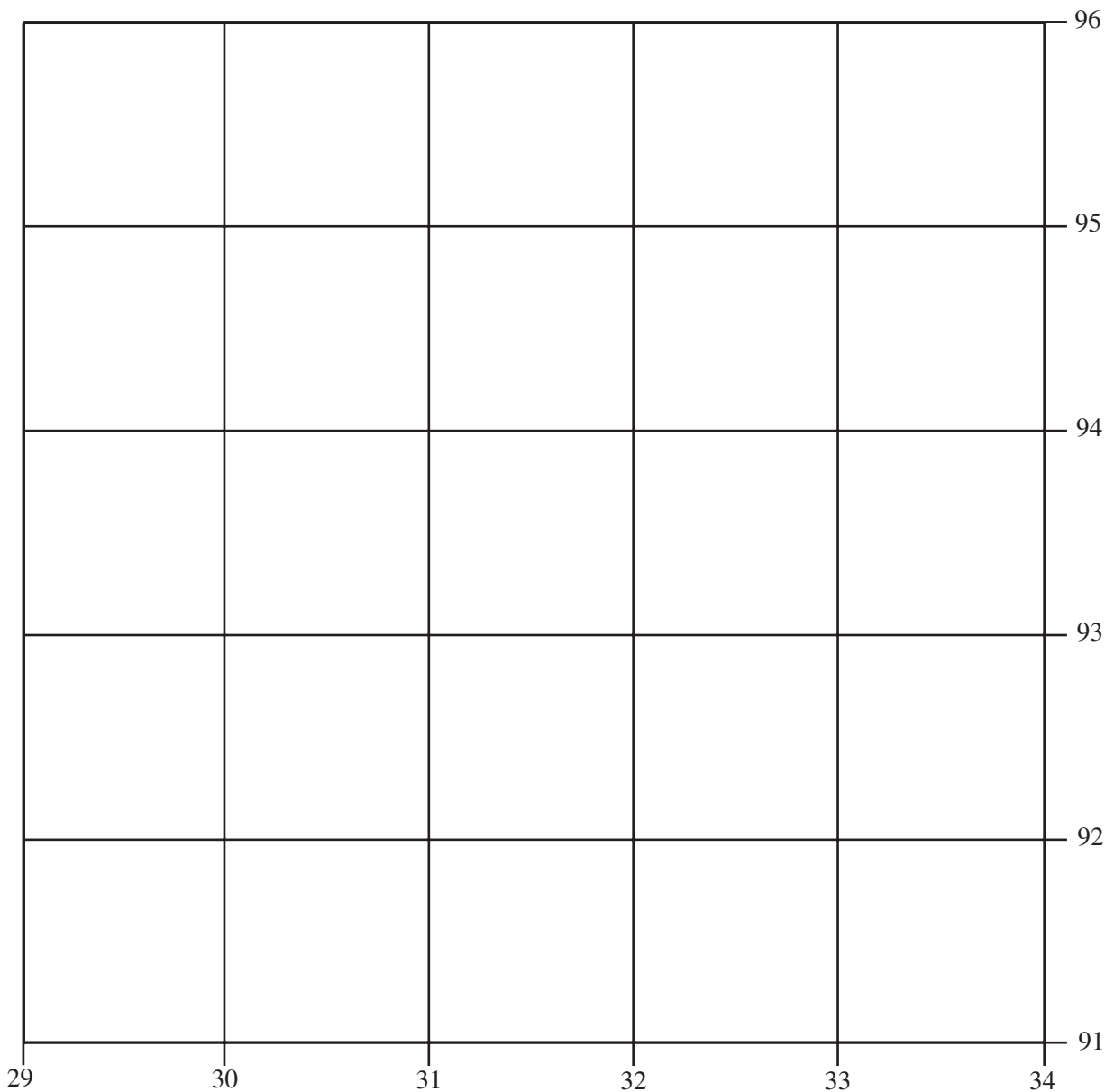
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(Questions continue overleaf)

(c) Study **Resource 2E**. The pie charts illustrate the urban and rural popula[...] ch continent. The bar charts illustrate the projected population change for som[...] world's largest cities.

Resource 2E

North America
Population 326 million

80.1%

New York

Mexico City

Europe
Population 726 million

73.0%

Asia
Population 3824 million

38.8%

60°N

Karachi

Kolkata

Mumbai

Tokyo

30°N

Latin America and Caribbean
Population 543 million

76.8%

Equator

Lagos

São Paulo

Buenos Aires

Africa
Population 850 million

38.7%

Jakarta

72.7%

0°

Oceania
Population 33 million

30°S

Key to pie charts

Rural Population

Urban Population

Population 2003

Projected population 2015

Population (millions)

Lagos, Nigeria
Karachi, Pakistan
Jakarta, Indonesia
Buenos Aires, Argentina
Kolkata, India
Mumbai, India
São Paulo, Brazil
New York, US
Mexico City, Mexico
Tokyo, Japan

14

(i) How many of the cities shown are projected to exceed 20 million people by 2015?

_____ [1]

(ii) 1. Which city shows the largest projected increase in population between 2003 and 2015?

_____ [1]

2. Explain why the projected population increase for this city is greater than that of MEDC cities such as Tokyo.

_____

_____

_____

_____

_____

_____ [3]

(iii) Which continent has the largest **percentage** of its population living in urban areas?

_____ [1]

(iv) Which continent has the largest **number** of people living in urban areas?

_____ [1]

_____

THIS IS THE END OF THE QUESTION PAPER
_____

Reminder: when you have finished the examination attach your fieldwork report and table of data to this paper using the treasury tag supplied.

Question Number	

CONTINUATION SHEET
(Number your answers clearly if you use this sheet)

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Question Number	

CONTINUATION SHEET
(Number your answers clearly if you use this sheet)

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