X208/13/01

NATIONAL QUALIFICATIONS 2013

THURSDAY, 30 MAY
9.00 AM – 11.30 AM

GEOGRAPHY
ADVANCED HIGHER

1. Candidates are expected to attempt **three** questions, **one** from Section A and **one** from Section B, **and** the question in Section C.
2. Both questions in Section A are worth 30 marks each and both questions in Section B 20 marks each. The question in Section C is worth 10 marks.
3. In all questions, marks will be given for sketch-maps and diagrams which are integral parts of an answer.
4. Candidates are encouraged to use the Supplementary Items and tracing paper provided for annotation or as bases for diagrams. If used, the resources should be placed inside the front cover of the candidate's answer book.
5. Candidates are reminded that they have an atlas which can be a valuable resource in answering questions in all parts of the paper.

LI X208/13/01 6/2510

Marks

SECTION A

Answer ONE question ONLY from this Section

Map Interpretation

Supplementary Item A, Ordnance Survey Map, Extract No 2007/EXP214 1:25000 (Explorer Series), Llanidloes, Mid Wales, is the basis for answers to questions in this Section.

For whichever question you choose in this Section (ie 1. or 2.) you are expected to make <u>extensive and detailed use</u> of your atlas and, in particular, the map extract.

You are strongly advised to read the whole of both question 1 and question 2 before you make your choice.

1. ***The Cambrian Mountains Initiative*** *is a wide-ranging project that aims to help promote rural enterprise, protect the environment and add value to products and services in Mid Wales—seeking to build a prosperous economic future for the communities of the region based around their inter-relationship with the special Cambrian Mountains landscape.*

Various themes to encourage tourism, to use fresh, local produce and to become a low carbon community are being encouraged in the area of the map extract as part of the Cambrian Mountains Initiative (CMI).

A site 200 × 300 metres is being sought to develop a hotel with adjacent timeshare holiday homes on a gentle slope.

The project will aim to

- encourage sustainable tourism in the area
- make use of local produce in the hotel's dining room
- make use of environmental and energy saving methods to reduce the carbon footprint of the buildings.

(*a*) Identify **one** suitable location for the development and draw it to scale on the tracing overlay (*Supplementary Item B*). **4**

(*b*) Discuss **in depth** and with **detailed map evidence from the whole OS map extract** the reasons for your choice of location. **12**

(*c*) Describe, with appropriate map evidence from the whole map extract, a range of possible visits and activities visitors to the hotel and holiday homes could undertake. **14**

(30)

Marks

2. *Supplementary Item A*, the Llanidloes and Newtown map extract **must be used in detail when answering this question**.

Supplementary Item A (Llanidloes and Newtown map extract) shows a variety of areas of woodlands.

(*a*) **Describe** the distribution of different types and sizes of woodland on the whole map extract. **6**

(*b*) Explain the forest pattern of woodland distribution identified in (*a*). **14**

(*c*) A national conservation agency wishes to establish a new area of oak wood of size that is defined by an area of approximately 500 m by 500 m. The woodland will provide habitats for small birds and mammals. Select a suitable location for this wood, draw it to scale on *Supplementary Item B*, and annotate **in detail** the site to show why it has been chosen. **10**

(30)

[Turn over for SECTION B on *Page four*

Marks

SECTION B

Answer ONE question ONLY from this Section

For whichever question you choose in this Section (ie 3. or 4.) you are encouraged to make use of your atlas.

You are strongly advised to read the whole of both question 3 and question 4 before you make your choice.

3. Study the information given in *Supplementary Item C*.

A Spearman Rank Correlation has been applied to the data in *Supplementary Item C*.

(*a*) State the null hypothesis. **1**

(*b*) Complete the table on *Supplementary Item C* and calculate the Spearman Rank Correlation Coefficient (r) for the data sets for:

(i) electricity consumed per person in kilowatt-hours (kWh);

(ii) Gross Domestic Product (GDP) per capita in US dollars. **4**

(*c*) State the results in terms of the null hypothesis. **1**

(*d*) Discuss the value of using this technique for measuring the correlation between the two variables in the data set. **4**

(*e*) With reference to the "r" result and *Supplementary Item C*, discuss possible reasons for the results. **10**

(20)

Marks

4. You are advised to use your atlas in this question.

Study all the material provided on *Supplementary Item D* which relates to the population of the United States of America excluding Alaska and Hawaii.

The map "Population Distribution of the United States of America 2010" is a dot map.

(*a*) Describe **and** explain the population distribution of the United States of America as shown on the dot map. **10**

(*b*) Explain the advantages and disadvantages of using a dot map for showing this information. **5**

(*c*) The choropleth map on *Supplementary Item D* shows the average population change per state of the United States of America from 2000 to 2005. Discuss the advantages and disadvantages of using a choropleth map to show this information. **5**

(20)

[Turn over for SECTION C on *Page six*

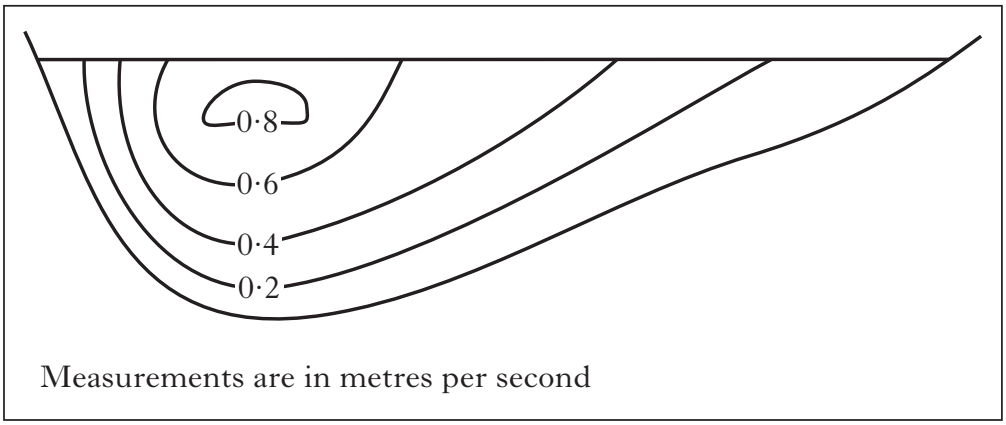
Marks

SECTION C

This question must be answered

5. A group of students was asked to investigate how water velocity varies across a river. They were asked to produce an isovel diagram similar to the one below.

Isovel diagram of a meander



Measurements are in metres per second

(*a*) State a null hypothesis for the study. **1**

(*b*) Describe in detail **two** methods used to collect the data required to construct an isovel diagram. **6**

(*c*) Identify and justify a suitable **statistical technique** to analyse the relationships between the data collected. **3**

(10)

[*END OF QUESTION PAPER*]

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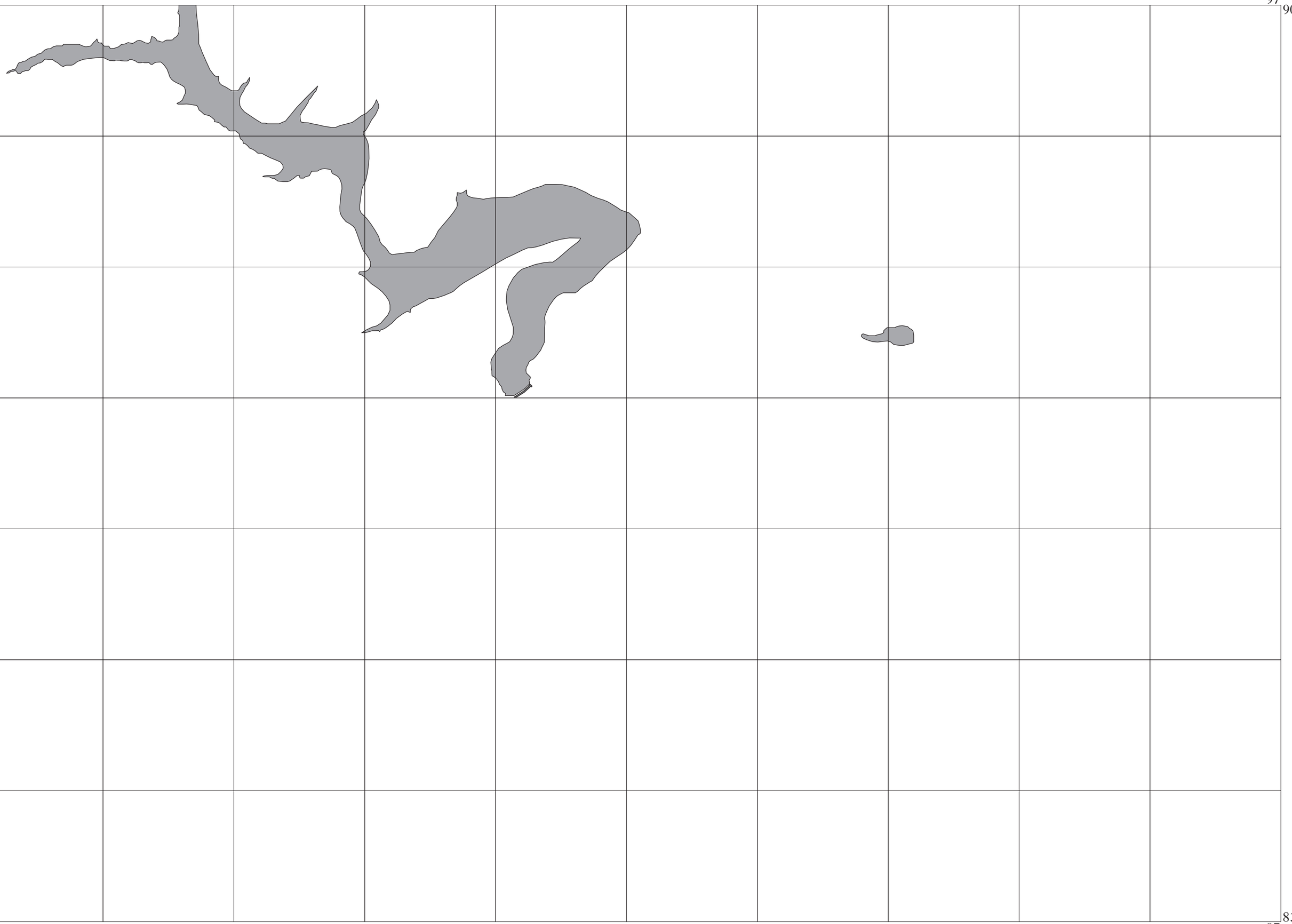
Full name of centre ..... Name of candidate ..... Date of birth .....

SUPP ITEM B



X208/13/31

NATIONAL QUALIFICATIONS 2013

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GEOGRAPHY
ADVANCED HIGHER
SECTION B
Supplementary Item C for Q3

Fill in these boxes.

Full name of centre

Town

Forename(s)

Surname

Date of birth
Day Month Year

Scottish candidate number

Number of seat

If annotated by the candidate, to be placed inside the front cover of the candidate's book and thus sent to the Scottish Qualifications Authority.

SUPPLEMENTARY ITEM C FOR QUESTION 3

Table 1

Country	Electricity consumed per person (kWh)	GDP per capita $US	Rank Electricity consumption	Rank GDP	Difference d	Difference d^2
Australia	10,300	34,240	13	14	–1	1
Brazil	2136	9682	9	11	–2	4
Cameroon	251	2014	5	5	0	0
Canada	15,406	39,950	14	17	–3	9
China	2142	6679	10	9	1	1
Eritrea	46	546	1	1	0	0
Finland	15,754	33,339	15	13	2	4
France	7075	30,598	12	12	0	0
Ghana	264	1370	6	3	3	9
Iceland	50,083	37,783	18	16	2	4
India	535	2622	7	6	1	1
Mongolia	1110	3307	8	8	0	0
Nepal	81	1182				
Norway	24,005	49,221				
Senegal	149	1714				
Sudan	91	2728				
Ukraine	2921	6716				
United Arab Emirates	26,135	34,981				
						Σ =

Table 2: Critical Values given for Significance Level

N (no of values)	Significance Level	Significance Level
	95%	99%
18	0·399	0·564

Formula

$$Rs = 1 - \frac{6\sum d^2}{n\left(n^2 - 1\right)}$$

X208/13/41

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GEOGRAPHY
ADVANCED HIGHER
SECTION B
Supplementary Item D
for Q4

Fill in these boxes.

Full name of centre

Town

Forename(s)

Surname

Date of birth
Day Month Year

Scottish candidate number

Number of seat

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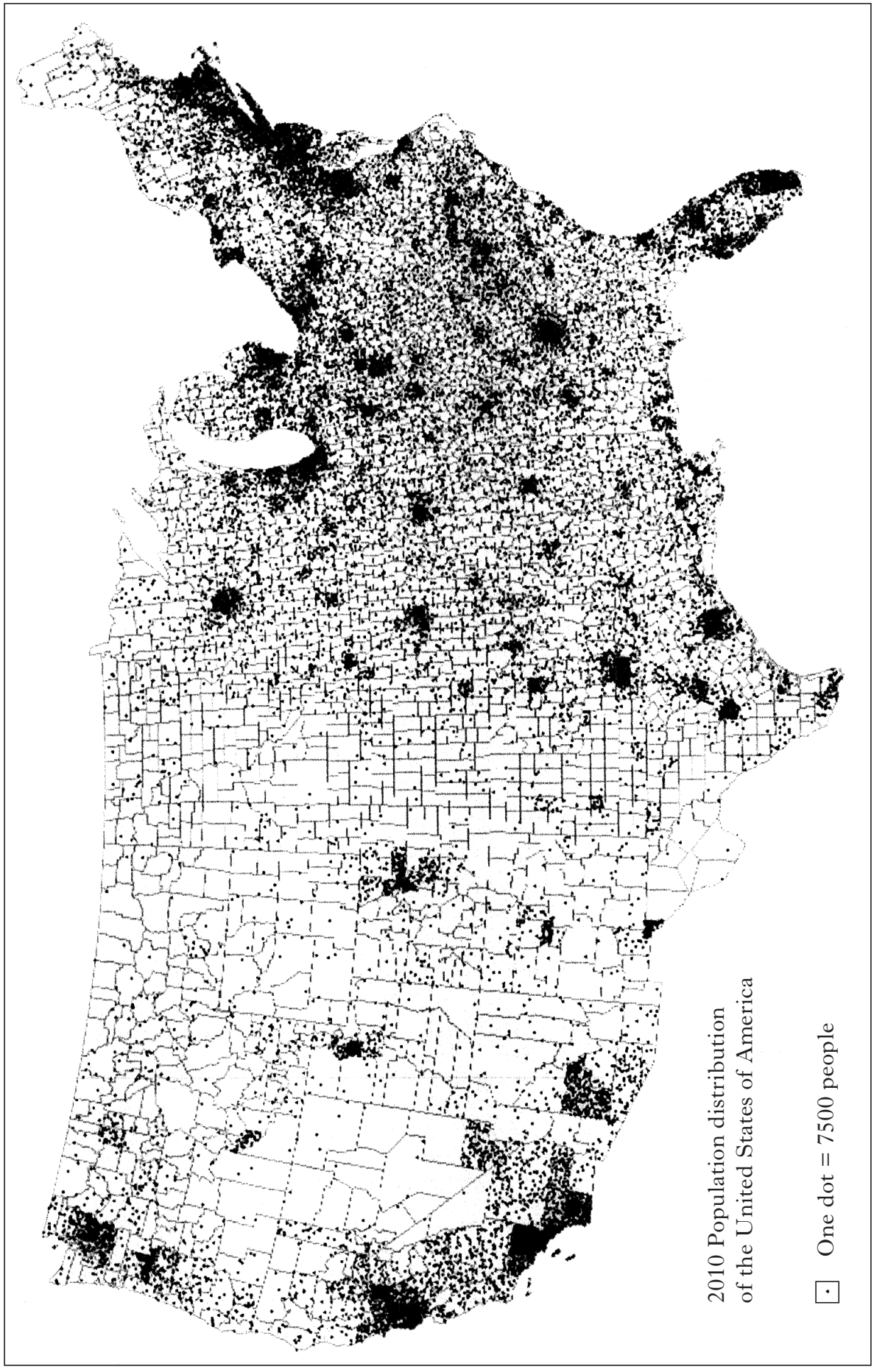
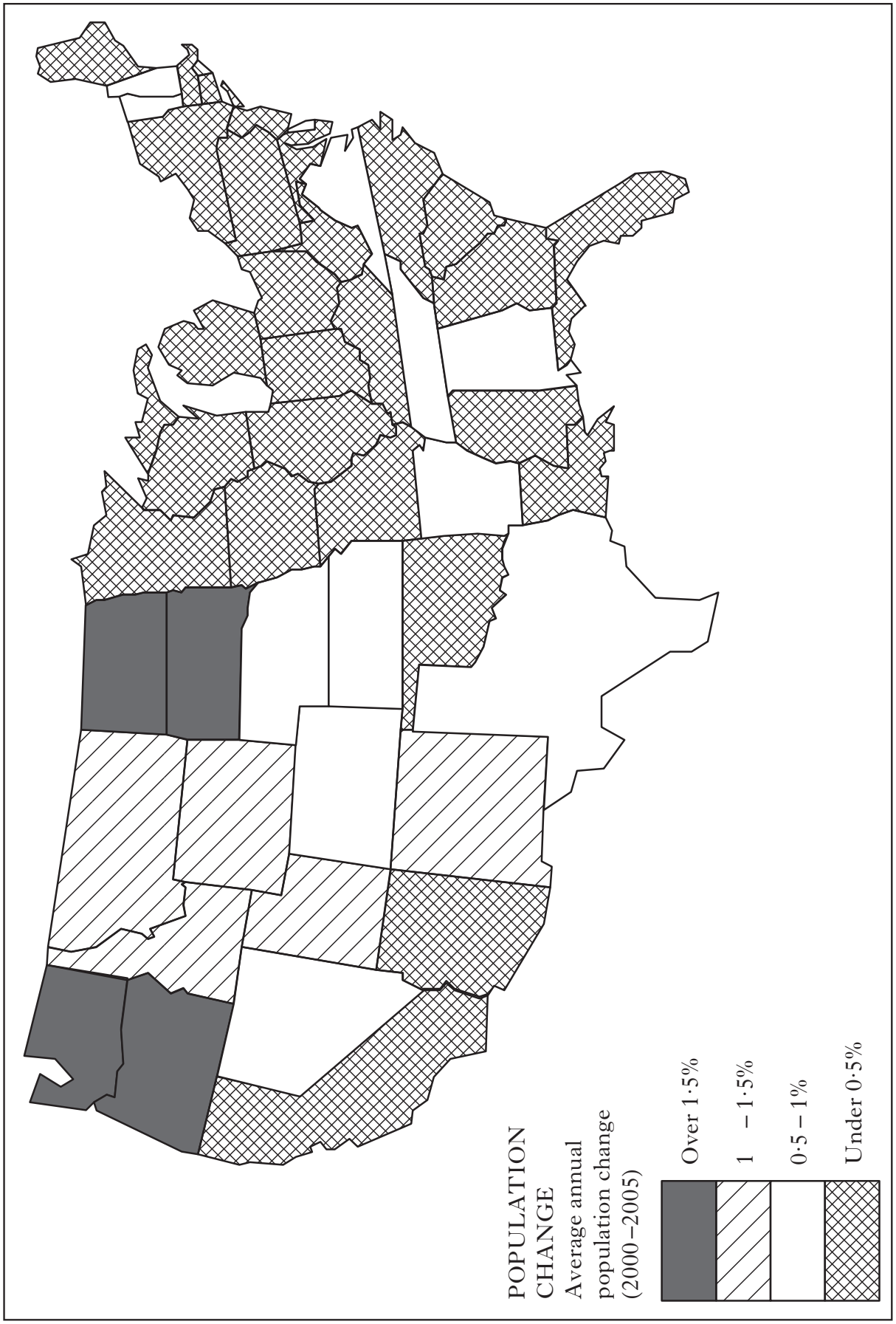
SUPPLEMENTARY ITEM D FOR QUESTION 4

Map 1: Population Distribution of the United States of America 2010



SUPPLEMENTARY ITEM D FOR QUESTION 4

Map 2: The Average Population Change per State of the United States of America from 2000 to 2005



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