AQA

Please write clearly in block capitals.

Centre number | | | | | | Candidate number | | | | |

Surname _____

Forename(s) _____

Candidate signature _____

FSMQ
DATA HANDLING
Level 2

Monday 16 May 2016 Afternoon Time allowed: 1 hour 15 minutes

Materials
For this paper you must have:
- a clean copy of the Data Sheet (enclosed)
- a calculator
- mathematical instruments.

Instructions
- Use black ink or black ball-point pen. Draw diagrams in pencil.
- Answer **all** questions.
- You must answer each question in the space provided. Do not write outside the box around each page or on blank pages.
- Do all rough work in this book. Cross through any work that you do not want to be marked.
- You may **not** refer to the copy of the Data Sheet that was avaliable prior to this examination. A clean copy is enclosed for your use.

Information
- The marks for questions are shown in brackets.
- The maximum mark for this paper is 50.
- You are expected to use a calculator where appropriate.

Advice
- In all calculations, show clearly how you work out your answer.

Section A

Answer **all** questions.

Answer each question in the space provided for that question.

Use **National Parks** *on page 2 of the Data Sheet.*

1 The spreadsheet shows information about some of the National Parks in the UK.

	A	B	C	D
1	**National Park**	**Number of visitors per year (million)**	**Total amount spent by visitors per year (£ million)**	**Average amount spent per visitor (£)**
2	Cairngorms	1.5	185	
3	Loch Lomond and the Trossachs	4	190	
4	Brecon Beacons	4.15	197	
5	Pembrokeshire Coast	4.2	498	
6	Snowdonia	4.27	396	

1 (a) Show that the average amount spent per visitor for the Cairngorms National Park is £123.33 to the nearest penny.

[1 mark]

1 (b) Complete the spreadsheet to show the average amount spent per visitor for each of the National Parks.
Give your answers to the nearest penny.

[3 marks]

1 (c) Write down a formula which calculates the value in cell D3

[1 mark]

Answer _____

5

Turn over for the next question

Section B

Answer **all** questions.

Answer each question in the space provided for that question.

Use **UK pop chart** *on page 3 of the Data Sheet.*

2 The table is reproduced below.

Single	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
Number of weeks at number 1	1	1	1	5	4	1	1	18	1	1	6	2	2	2	6

2 (a) Which word describes this type of data?
Circle your answer.

[1 mark]

Continuous Discrete Qualitative Grouped

2 (b) One average is to be chosen to represent the data.

2 (b) (i) Why is the **mean** not the best average to use for this data?
Give **one** reason.

[1 mark]

_____

_____

2 (b) (ii) Why is the **mode** not the best average to use for this data?
Give **one** reason.

[1 mark]

_____

_____

2 (c) What percentage of these singles were at the number 1 position for exactly 2 weeks in 1953?

[2 marks]

Answer _____ %

2 (d) A number 1 single from 1953 is chosen at random.

What is the probability that it was at the number 1 position for **less** than 3 weeks? Give your answer as a fraction in its simplest form.

[2 marks]

Answer _____

7

Turn over for the next question

Section C

Answer **all** questions.

Answer each question in the space provided for that question.

Use **Weather** *on page 3 of the Data Sheet.*

3 The table shows the total sunshine hours and the average daily maximum temperature in Whitby for the month of June in 10 different years.

Year	Total sunshine hours	Average daily maximum temperature (°C)
2000	185.5	17.7
2003	251.3	20.2
2004	226.5	19.1
2005	206.4	18.9
2006	233.5	20.1
2007	130.8	16.3
2009	191.1	16.8
2011	225.4	19.1
2012	137.1	16.5
2014	183.4	17.9

3 (a) Find:

3 (a) (i) the mean of the ten totals of the sunshine hours;

[2 marks]

3 (a) (ii) the mean of the ten average daily maximum temperatures.

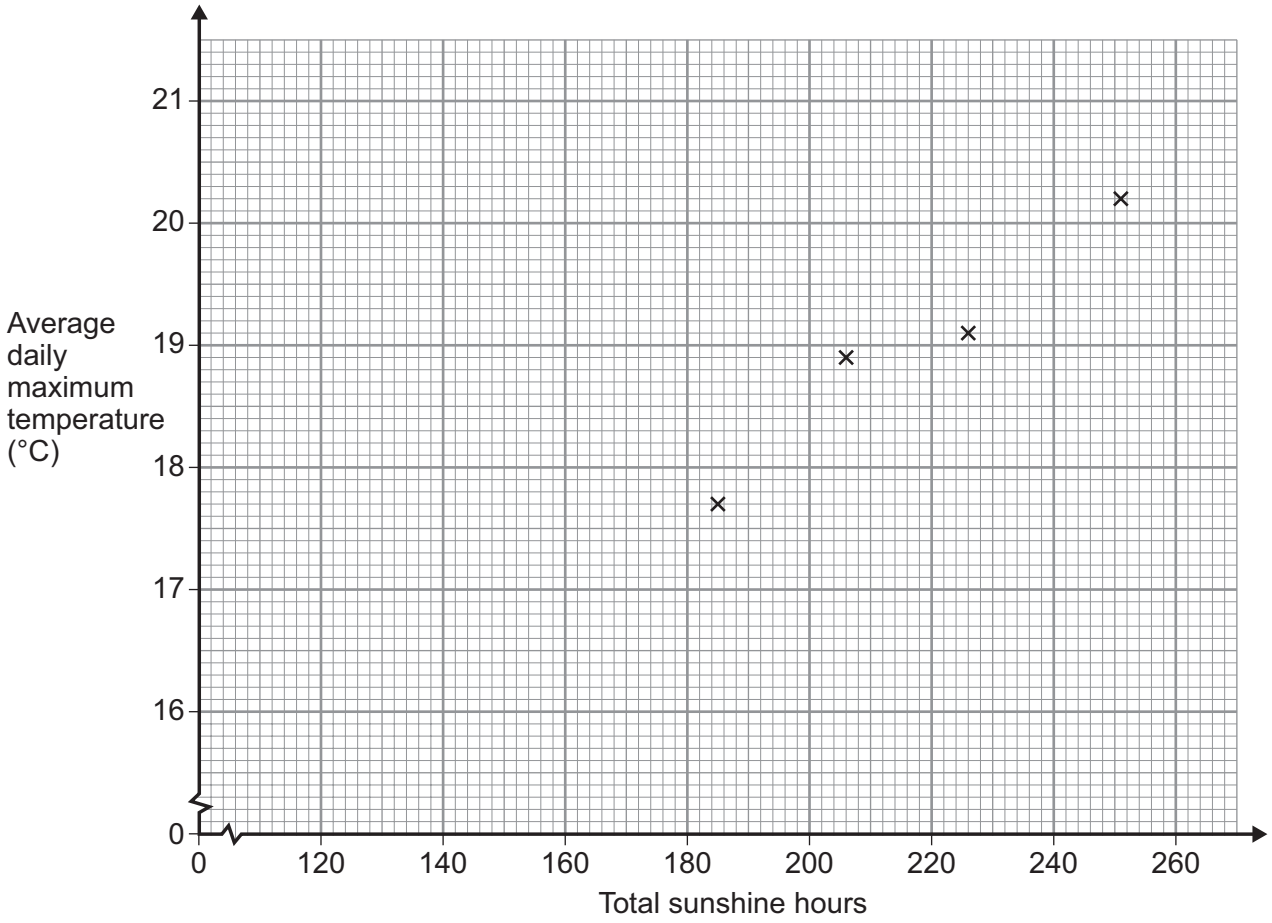
[1 mark]

Answer **(i)** sunshine_____ hours

(ii) temperatures_____ °C

3 (b) Plot a scatter graph to show the data.
The first four points have been done for you.

[2 marks]



3 (c) Draw a line of best fit through the mean point.

[2 marks]

3 (d) In June 1999 in Whitby the total sunshine hours was 165

Estimate the average daily maximum temperature in June 1999 in Whitby.

[2 marks]

Answer _____

3 (e) Comment on the total sunshine hours and the average daily maximum temperature for Whitby in June 2009

[1 mark]

_____

_____

_____

10

Turn over ▶

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Section D

Answer **all** questions.

Answer each question in the space provided for that question.

4 The question below was in a questionnaire about what people like to read.

In a typical year, how many fiction books do you read?

☐ 1 to 4

☐ 5 to 10

☐ 10 to 15

☐ More than 16

☐ I never read fiction books

4 (a) Give one criticism of the options given in the answer section.

[1 mark]

4 (b) In the space below, rewrite the answer section with better options.

[2 marks]

3

Section E

Answer **all** questions.

Answer each question in the space provided for that question.

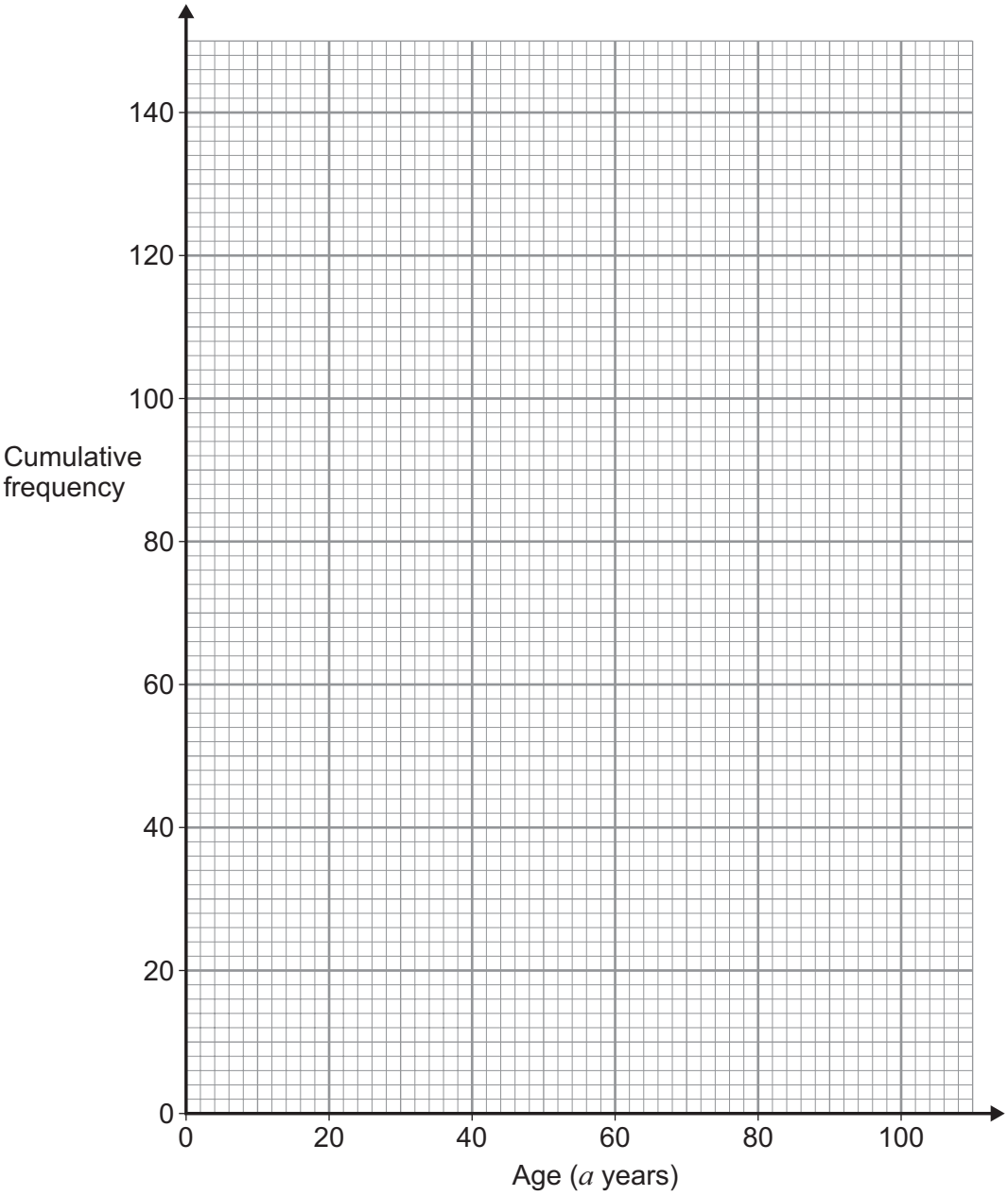
Use **Populations** *on page 4 of the Data Sheet.*

5 The data is reproduced below.

5 (a) Draw a cumulative frequency diagram on the grid opposite to show the data.
You may use the spare column in the table for any calculation required.

[4 marks]

Age, a years	**Number of people**	
$0 \leqslant a < 20$	22	
$20 \leqslant a < 40$	42	
$40 \leqslant a < 60$	31	
$60 \leqslant a < 80$	31	
$80 \leqslant a < 100$	10	
Total	136	



5 (b) Use your cumulative frequency diagram to find:

5 (b) (i) the median;

[1 mark]

Answer _____

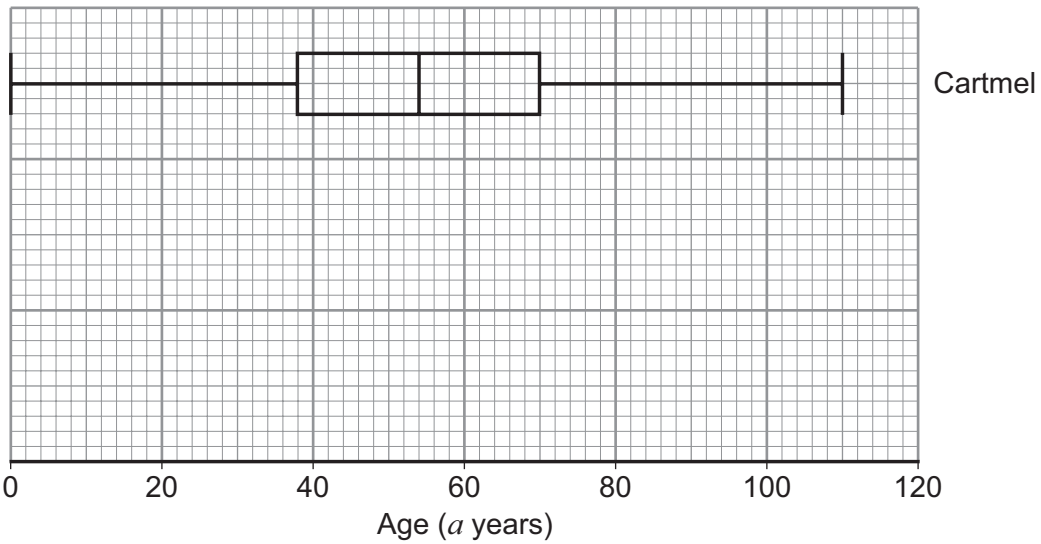
5 (b) (ii) the interquartile range.

[2 marks]

Answer _____

Turn over ▶

5 (c) Cartmel is a village in Cumbria.
The ages of people living in Cartmel in March 2011 were also recorded.
These are shown in the box and whisker diagram below.



For March 2011, compare the ages of people living in Cartmel with the ages of people living in St.Martin's.

[4 marks]

11

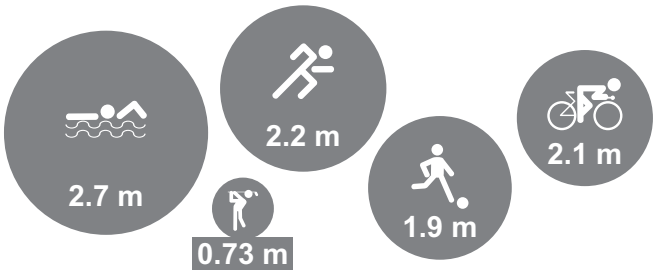
Section F

Answer **all** questions.

Answer each question in the space provided for that question.

Use **Sport** *on page 4 of the Data Sheet.*

6



Not drawn accurately

6 (a) How many **more** people cycle at least once a week than play golf at least once a week?

[2 marks]

Answer _____

6 (b) A website reproduces the diagram as comparative pie charts.

The diameter of the pie chart representing 2.1 million people who cycle at least once a week is 18 mm

Work out the diameter of the circle representing the 2.7 million people who swim at least once a week.

Give your answer to three significant figures.
You **must** show your working.

[4 marks]

Answer _____ mm

6

Turn over ▶

Section G

Answer **all** questions.

Answer each question in the space provided for that question.

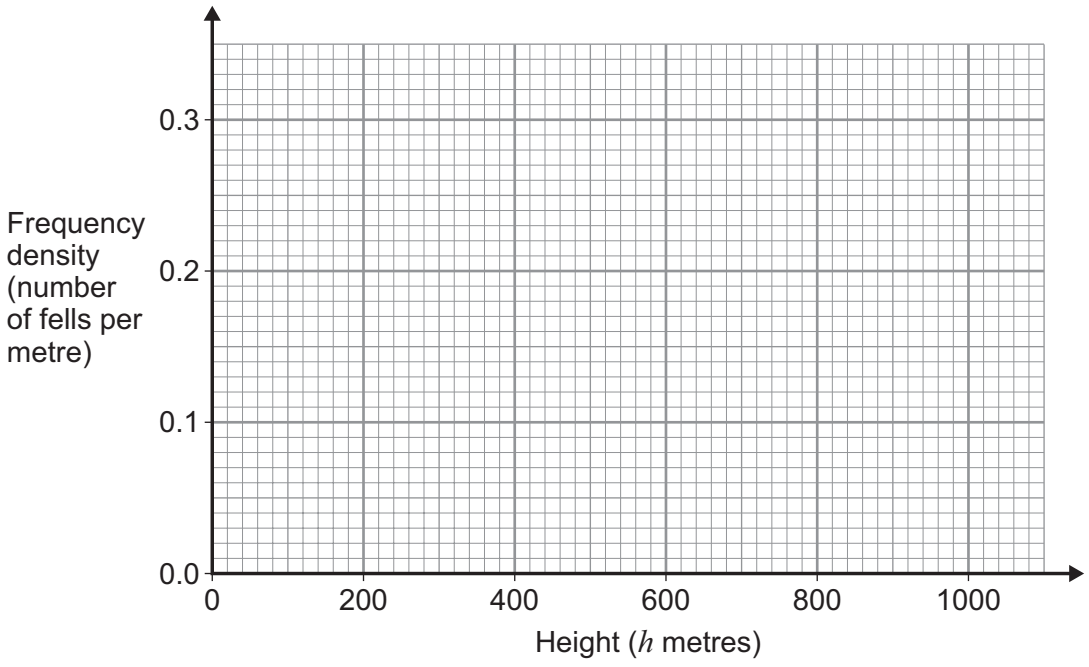
Use **Lakeland Fells** *on page 5 of the Data Sheet.*

7 The data is reproduced below.
You may use the spare columns in the table for any calculation required.

Height, h metres	**Number of fells**		
$200 \leqslant h < 400$	12		
$400 \leqslant h < 450$	9		
$450 \leqslant h < 500$	8		
$500 \leqslant h < 550$	14		
$550 \leqslant h < 600$	8		
$600 \leqslant h < 700$	12		
$700 \leqslant h < 800$	13		
$800 \leqslant h < 900$	2		
Total	78		

7 (a) Draw a histogram to represent the data.

[5 marks]



7 (b) Estimate the number of these fells that are higher than 770 metres.
You **must** show your working.

[3 marks]

Answer _____

8

END OF QUESTIONS

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