Write your name here

Surname	Other names

Edexcel GCSE

Centre Number	Candidate Number

Statistics
Comparative Pie Charts

You must have:
Ruler graduated in centimetres and millimetres, protractor, pen
HB pencil, eraser, electronic calculator.

Total Marks

Instructions

- Use **black** ink or ball-point pen.
- **Fill in the boxes** at the top of this page with your name, centre number and candidate number.
- Answer **all** questions.
- Answer the questions in the spaces provided
  – *there may be more space than you need.*

Information

- The marks for **each** question are shown in brackets
  – *use this as a guide as to how much time to spend on each question.*
- Questions labelled with an **asterisk** (*) are ones where the quality of your written communication will be assessed
  – *you should take particular care on these questions with your spelling, punctuation and grammar, as well as the clarity of expression.*

Advice

- Read each question carefully before you start to answer it.
- Keep an eye on the time.
- Try to answer every question.
- Check your answers if you have time at the end.

Higher Tier Formulae

You must not write on this page.
Anything you write on this page will gain NO credit.

Mean of a frequency distribution $= \dfrac{\sum fx}{\sum f}$

Mean of a grouped frequency distribution $= \dfrac{\sum fx}{\sum f}$, where x is the mid-interval value.

Variance $= \dfrac{\sum (x-\bar{x})^2}{n}$

Standard deviation (set of numbers) $\sqrt{\left[\dfrac{\sum x^2}{n} - \left(\dfrac{\sum x}{n}\right)^2\right]}$

or $\sqrt{\left[\dfrac{\sum (x-\bar{x})^2}{n}\right]}$

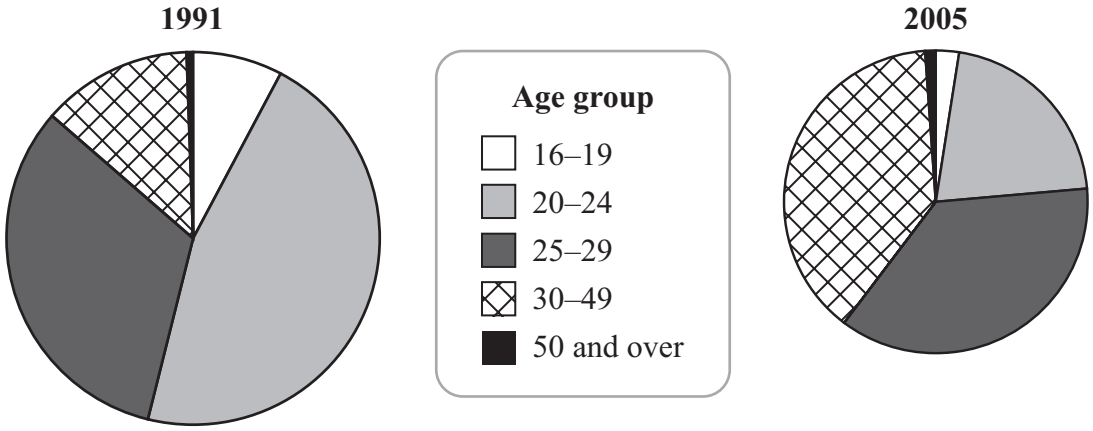
where $\bar{x}$ is the mean set of values.

Standard deviation (discrete frequency distribution) $\sqrt{\left[\dfrac{\sum fx^2}{\sum f} - \left(\dfrac{\sum fx}{\sum f}\right)^2\right]}$

or $\sqrt{\left[\dfrac{\sum f(x-\bar{x})^2}{\sum f}\right]}$

Spearman's Rank Correlation Coefficient $1 - \dfrac{6\sum d^2}{n(n^2-1)}$

1 The comparative pie charts give information about the number of women who got married in 1991 and in 2005 and the age at which they married.



(Source: adapted from www.statistics.gov.uk)

(a) What has happened to the total number of women who married in 2005 compared to the total number in 1991?

Comment on how the pie charts show this.

.....

.....

.....

.....

(2)

(b) Write down the age group with the greatest decrease from 1991 to 2005

.....

(1)

(c) For the 30–49 age group, describe how the number of women who married changed in 2005 compared to 1991

Give a reason for your answer.

.....

.....

.....

.....

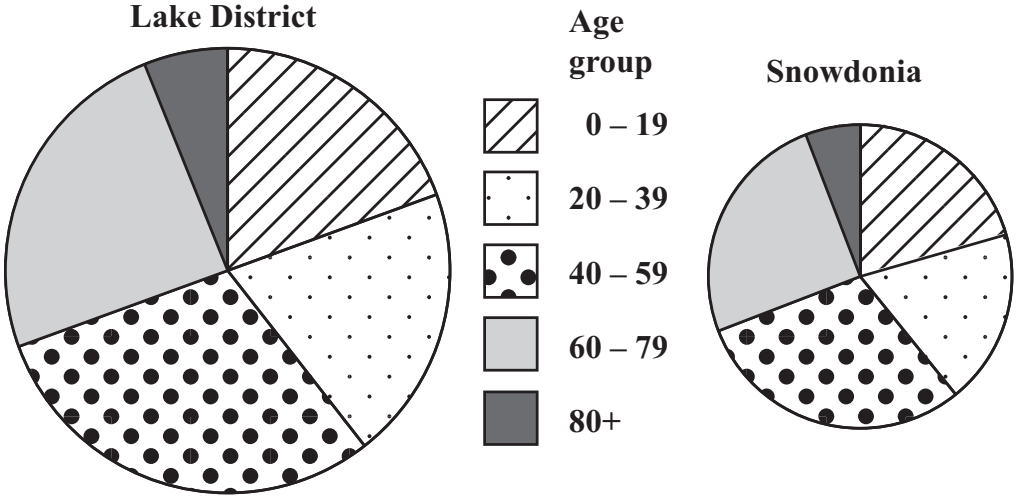
.....

(2)

(Total for Question 1 is 5 marks)

2 The comparative pie charts give information about the numbers of people living in two national parks.
They also show the age groups of the people.

The numbers of people living in two national parks



(Data source: Office for National Statistics)

(a) Compare the total number of people living in the Lake District with the total number of people living in Snowdonia.

Give reasons for your answer.

.....

.....

.....

.....

.....

.....

.....

.....

(2)

The largest number of people living in the Lake District is in the same age group as the largest number of people living in Snowdonia.

(b) Write down the age group.

.....

(1)

The angles at the centres of the sectors for the 40 – 59 age group are the same on both pie charts.

(c) Describe how the number of people aged 40 – 59 years in the Lake District compares with the number of people aged 40 – 59 years in Snowdonia.

Give a reason for your answer.

.....

.....

.....

.....

(2)

(Total for Question 2 is 5 marks)