

Write your name here

Surname

Other names

Pearson Edexcel
International
Advanced Level

Centre Number

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Candidate Number

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Statistics S2

Advanced/Advanced Subsidiary

Friday 29 January 2016 – Morning

Time: 1 hour 30 minutes

Paper Reference

WST02/01**You must have:**

Mathematical Formulae and Statistical Tables (Blue)

Total Marks

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Candidates may use any calculator allowed by the regulations of the Joint Council for Qualifications. Calculators must not have the facility for symbolic algebra manipulation, differentiation and integration, or have retrievable mathematical formulae stored in them.

Instructions

- Use **black** ink or ball-point pen.
- If pencil is used for diagrams/sketches/graphs it must be dark (HB or B). Coloured pencils and highlighter pens must not be used.
- **Fill in the boxes** at the top of this page with your name, centre number and candidate number.
- Answer **all** questions and ensure that your answers to parts of questions are clearly labelled.
- Answer the questions in the spaces provided – *there may be more space than you need.*
- You should show sufficient working to make your methods clear. Answers without working may not gain full credit.
- Values from the statistical tables should be quoted in full. When a calculator is used, the answer should be given to an appropriate degree of accuracy.

Information

- The total mark for this paper is 75.
- The marks for **each** question are shown in brackets – *use this as a guide as to how much time to spend on each question.*

Advice

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

Turn over ►

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5. The number of eruptions of a volcano in a 10 year period is modelled by a Poisson distribution with mean 1

(a) Find the probability that this volcano erupts at least once in each of 2 randomly selected 10 year periods. (2)

(b) Find the probability that this volcano does not erupt in a randomly selected 20 year period. (2)

The probability that this volcano erupts exactly 4 times in a randomly selected w year period is 0.0443 to 3 significant figures.

(c) Use the tables to find the value of w (3)

A scientist claims that the mean number of eruptions of this volcano in a 10 year period is more than 1

She selects a 100 year period at random in order to test her claim.

(d) State the null hypothesis for this test. (1)

(e) Determine the critical region for the test at the 5% level of significance. (2)

Horizontal lines for writing answers.

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