

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 17 January 2014 – Afternoon

Time: 1 hour 30 minutes

Paper Reference

WST02/01

You must have:

Mathematical Formulae and Statistical Tables (Blue)

Total Marks

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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P 4 2 9 6 2 X A 0 1 2 4

PEARSON

Find the probability that, in a batch of 10 randomly selected leaf cuttings, the number taking root will be

- (a) (i) exactly 1
(ii) more than 2

(5)

A second random sample of 160 leaf cuttings is selected.

- (b) Using a suitable approximation, estimate the probability of at least 10 leaf cuttings taking root.

(3)

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(Total 8 marks)



- (b) Identify the sampling units. (1)

- (c) Give one advantage and one disadvantage of taking a census rather than a sample survey.
- (2)**

Bill believes that only 30% of customers would like a greater choice on the menu. He takes a random sample of 50 customers and finds that 20 of them would like a greater choice on the menu.

- (d) Test, at the 5% significance level, whether or not the percentage of customers who would like a greater choice on the menu is more than Bill believes. State your hypotheses clearly.



[illegible]

(Total 10 marks)

Q2

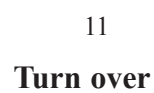




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[illegible]

(Total 11 marks)



Charlotte records the number of calls, C , received in 4 hours.

A test of the null hypothesis $H_0: \lambda = 1.5$ is carried out.

H_0 is rejected if $C > 10$

- (a) Write down the alternative hypothesis.

(1)

- (b) Find the significance level of the test.

(3)

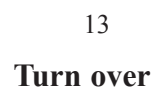
Given that $P(C > 10) < 0.1$

- (c) find the largest possible value of λ that can be found by using the tables.

(3)

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(Total 7 marks)



(d) Find the probability that the head teacher will buy a new photocopier. (5)

[illegible]

[illegible]



[illegible]

Q6

[illegible]

Question 7 continued

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(Total 12 marks)

Q7

TOTAL FOR PAPER: 75 MARKS

END

