

CIE
Probability & Statistics 2
分类真题
2020-2022 册

A Level Clouds 出品

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Chapter 1

Hypothesis Testing

Q1: 9709/62/M20

- 7 A national survey shows that 95% of year 12 students use social media. Arvin suspects that the percentage of year 12 students at his college who use social media is less than the national percentage. He chooses a random sample of 20 students at his college and notes the number who use social media. He then carries out a test at the 2% significance level.

(a) Find the rejection region for the test.

[4]

Horizontal lines for writing.

(b) Find the probability of a Type I error.

[1]

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(c) Jimmy believes that the true percentage at Arvin's college is 70%. Assuming that Jimmy is correct, find the probability of a Type II error. [3]

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Q2: 9709/61/S20

- 4 A fair spinner has five sides numbered 1, 2, 3, 4, 5. The score on one spin is denoted by X .

(a) Show that $\text{Var}(X) = 2$. [1]

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Fiona has another spinner, also with five sides numbered 1, 2, 3, 4, 5. She suspects that it is biased so that the expected score is less than 3. In order to test her suspicion, she plans to spin her spinner 40 times. If the mean score is less than 2.6 she will conclude that her spinner is biased in this way.

(b) Find the probability of a Type I error. [4]

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(c) State what is meant by a Type II error in this context. [1]

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