

In a survey of 300 randomly chosen adults in Rickton, 134 said that they exercised regularly. This information was used to calculate an $\alpha\%$ confidence interval for the proportion of adults in Rickton who exercise regularly. The upper bound of the confidence interval was found to be 0.487, correct to 3 significant figures.

Find the value of α correct to the nearest integer. [4]

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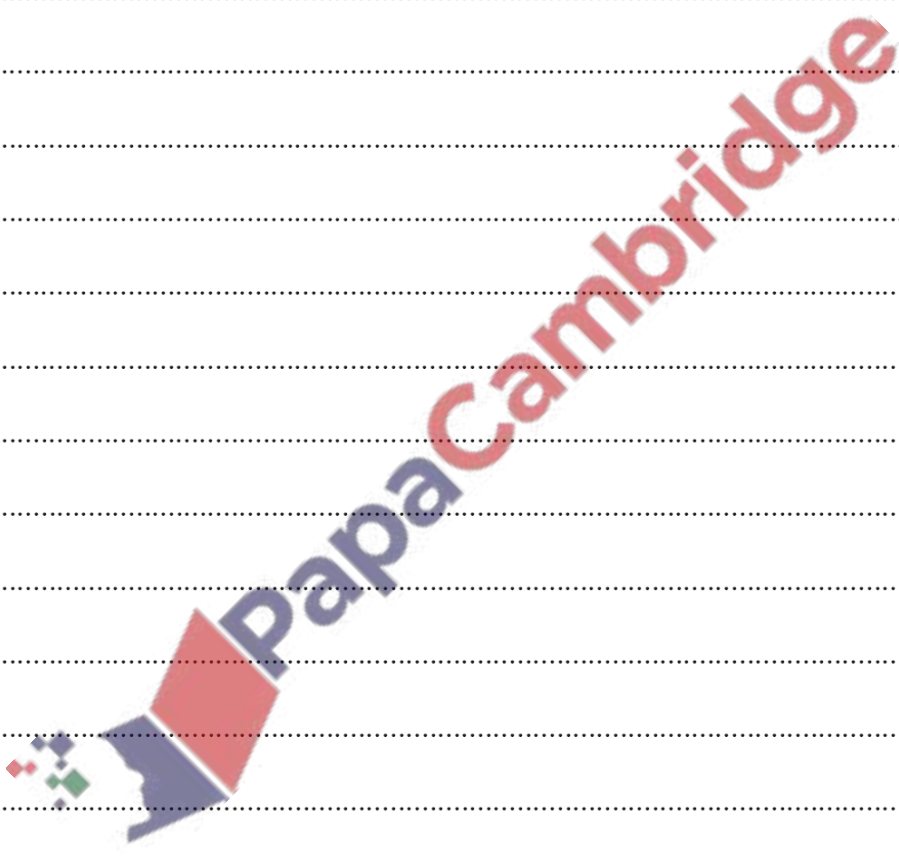
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The length, in minutes, of mathematics lectures at a certain college has mean μ and standard deviation 8.3.

- (a) The total length of a random sample of 85 lectures was 4590 minutes.

Calculate a 95% confidence interval for μ .

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The length, in minutes, of history lectures at the college has mean m and standard deviation s .

- (b) Using a random sample of 100 history lectures, a 95% confidence interval for m was found to have width 2.8 minutes.

Find the value of s .

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