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6. Baako grows two varieties of strawberry plant, A and B. The mean yield per strawberry plant of variety A is 280 g. Baako believes that variety B gives a higher yield per strawberry plant than variety A. The yield per strawberry plant of variety B has standard deviation 70 g.
Baako takes a random sample of 125 strawberry plants of variety B and finds the mean yield is 290 g.

(a) Test, at the 5% level of significance, Baako's claim. State your hypotheses clearly.

(5)

Ayodele claims that using fertiliser increases the yield per strawberry plant by more than 100 g. He takes a random sample of 500 strawberry plants of variety C and adds fertiliser to just 300 of them. The yields, x grams, are summarised in the table below.

	n	Mean yield ($\bar{x}$)	s
With fertiliser	300	410	90
Without fertiliser	200	290	60

(b) Test, at the 0.5% level of significance, Ayodele's claim. State your hypotheses and show your working clearly.

(7)

(c) (i) State an assumption that you have made about the allocation of plants to the "With fertiliser" group in carrying out the test in part (b).

(ii) State a further necessary assumption that you have made in carrying out the test in part (b).

(2)

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Question 6 continued

(Total 14 marks)

Q6