6. Roxane, a scientist, carries out an investigation into the fat content of different brands of crisps.

Roxane took random samples of different brands of crisps and recorded, in grams, the fat content (x) of a 30 gram serving.

The table below shows some results for just two of these brands.

Brand	$\sum x$	$\sum x^2$	$\bar{x}$	s	Sample size
A	350	1753.9744	5.0	0.24	70
B	331.5	1694.65	α	β	65

(a) Calculate the value of α and the value of β

(3)

Roxane claims that these results show that the crisps from brand A have a lower fat content than the crisps from brand B, as the mean fat content for brand A is, statistically, significantly less than the mean fat content for brand B.

(b) Stating your hypotheses clearly, carry out a suitable test, at the 5% level of significance, to assess Roxane's claim.
You should state your test statistic and critical value.

(7)

(c) For the test in part (b), state whether or not it is necessary to assume that the fat content of crisps is normally distributed. Give a reason for your answer.

(2)

(d) State an assumption you have made in carrying out the test in part (b).

(1)

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Question 6 continued

(Total for Question 6 is 13 marks)