7 The following table shows observed frequencies, where x is an integer, from an experiment to test whether or not a six-sided die is biased.

Number on die	1	2	3	4	5	6
Observed frequency	$x + 6$	$x - 8$	$x + 8$	$x - 5$	$x + 4$	$x - 5$

A goodness of fit test is conducted to determine if there is evidence that the die is biased.

(a) Write down suitable null and alternative hypotheses for this test.

(1)

It is found that the null hypothesis is not rejected at the 5% significance level.

(b) Hence

(i) find the minimum value of x

(8)

(ii) determine the minimum number of times the die was rolled.

(2)

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Question 7 continued

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Question 7 continued

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(Total for Question 7 is 11 marks)

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