AQA – Statistical hypothesis testing – AS Mathematics P2

1. June/2021/Paper_7356/2/No.18

It is known from previous data that 14% of the visitors to a particular cookery website are under 30 years of age.

To encourage more visitors under 30 years of age a large advertising campaign took place to target this age group.

To test whether the campaign was effective, a sample of 60 visitors to the website was selected. It was found that 15 of the visitors were under 30 years of age.

(a) Explain why a one-tailed hypothesis test should be used to decide whether the sample provides evidence that the campaign was effective.

[1 mark]

(b) Carry out the hypothesis test at the 5% level of significance to investigate whether the sample provides evidence that the proportion of visitors under 30 years of age has increased.

[5 marks]

(c) State one necessary assumption about the sample for the distribution used in part (b) to be valid.

[1 mark]