2.6 Statistics: Data Presentation and Interpretation Depth: 10-minute Pack

EDEXCEL 9MA0 · Calculator allowed · about 10 minutes

Total Marks

Name: _____ Date: ____ / ____ / _____

Answer ALL questions. Show all your working.

A-Level Statistics: Data Presentation and Interpretation - Depth Practice

Original material written for Revision Library, styled on Edexcel AS/A-level Mathematics (9MA0) Statistics content.

This pack extends core data presentation and interpretation skills to full A-level depth: measures of location and spread (including coding), identifying outliers by the quartile rule and the standard deviation rule, box plots and skewness, histograms and frequency density, linear interpolation, correlation and regression (including coding and residuals), and evaluating statistical models in context, in the style of the large data set used across the qualification. All contexts and figures are original.

1 The times, in minutes, taken by 15 students to complete an S6 statistics quiz are recorded and arranged in ascending order:

8, 10, 11, 12, 12, 13, 14, 14, 15, 16, 16, 17, 18, 19, 31

(a) Find the lower quartile, the median and the upper quartile of this data set. **(3)**

(b) A value is defined as an outlier if it lies more than 1.5 x IQR beyond the nearer quartile. Using your answers to part (a), determine whether the value 31 is an outlier, showing your working clearly. **(3)**

(Total for Question 1 is 6 marks)

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Mark scheme · 2.6 Statistics: Data Presentation and Interpretation Depth: 10-minute Pack

Question 1

(a) lower quartile Q1 = 12 **B1**

(a) median = 14 **B1**

(a) upper quartile Q3 = 17 **B1**

(a) Answer: Q1 = 12 minutes, median = 14 minutes, Q3 = 17 minutes

(b) IQR = Q3 - Q1 = 5 found **M1**

(b) correct boundary calculated: Q3 + 1.5 x IQR = 17 + 7.5 = 24.5 **M1**

(b) correct conclusion with comparison shown: since 31 > 24.5, 31 is an outlier **A1**

(b) Answer: 31 minutes is an outlier, since it exceeds the upper boundary of 24.5 minutes

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