



S25-10min Histograms: 10-minute Pack

EDEXCEL 1ST0 · Calculator allowed · about 10 minutes

Total Marks

Name: _____ Date: ____ / ____ / ____

Answer ALL questions. Show all your working.

- 1** 24 pupils were timed, to the nearest whole minute, on how long they took to complete a puzzle. The histogram shows the results.



- (a) Write down the frequency of pupils whose time was $6 \leq t < 7$ minutes. (1)

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- (b) Write down the frequency density for the class $6 \leq t < 7$. (1)

.....

- (c) Write down the modal class. (1)

.....

- (d) Work out the number of pupils whose time was at least 7 minutes. (2)

.....

(Total for Question 1 is 5 marks)

2 Use the formula frequency density = frequency / class width for each part.

(a) A class has frequency 18 and class width 3. Work out the frequency density for this class. (2)

.....
(b) A different class has frequency 52 and class width 8. Work out the frequency density for this class. (2)

.....
(Total for Question 2 is 4 marks)

3 A student is given a grouped frequency table with class widths 2, 5, 3 and 10 hours, and frequencies 2, 18, 9 and 40. She draws a histogram by plotting bar heights equal to the frequencies (2, 18, 9 and 40) directly, and labels the vertical axis 'Frequency'.

(Total for Question 3 is 2 marks)

Mark scheme · S25-10min Histograms: 10-minute Pack

Question 1

- (a) **B1** 8 cao
- (a) **Answer: 8**
- (b) **B1** 8 cao
- (b) **Answer: 8**
- (c) **B1** $6 \leq t < 7$ cao
- (c) **Answer: $6 \leq t < 7$**
- (d) **M1** $4 + 2$, oe (adds the frequencies for $7 \leq t < 8$ and $8 \leq t < 9$)
- (d) **A1** 6 cao
- (d) **Answer: 6**

Question 2

- (a) **M1** $18 / 3$, oe
- (a) **A1** 6 cao
- (a) **Answer: 6**
- (b) **M1** $52 / 8$, oe
- (b) **A1** 6.5 cao
- (b) **Answer: 6.5**

Question 3

- **B1** since the class widths are unequal, bar heights must show frequency density (frequency / class width), not raw frequency, otherwise the classes cannot be compared fairly; the vertical axis should be labelled 'Frequency density'
- **B1** $40 / 10 = 4$ cao (correct frequency density for the class with frequency 40 and width 10)
- **Answer: The vertical axis should show frequency density, not frequency; the correct height for the last class is $40 / 10 = 4$.**