

Averages from Grouped Frequency Tables

For Pearson Edexcel GCSE Mathematics (1MA1) • Foundation tier

Name _____

Total marks: **26**

Answer **all** questions in the spaces provided. Show your working: marks are given for correct method.

1 The table gives information about the times, in minutes, that 20 students took to walk to school.

Time (t minutes)	Frequency	Midpoint	Midpoint $\times$ frequency
$0 < t \leq 10$	4		
$10 < t \leq 20$	9		
$20 < t \leq 30$	5		
$30 < t \leq 40$	2		

(a) Write down the modal class interval.

.....
(1)

(b) Complete the last two columns of the table.

(2)

(c) Work out an estimate for the mean time.

..... minutes
(2)

(Total for Question 1 is 5 marks)

- 2 The table shows information about the distances 40 people travel to work.

Distance (d km)	Frequency
$0 < d \leq 10$	4
$10 < d \leq 20$	9
$20 < d \leq 30$	14
$30 < d \leq 40$	8
$40 < d \leq 50$	5

- (a) Write down the modal class interval.

.....
(1)

- (b) Work out an estimate for the mean distance.

..... km
(3)

- (c) Find the class interval that contains the median.

.....
(1)

(Total for Question 2 is 5 marks)

- 3** The table shows information about the ages of 30 people.

Age (a years)	Frequency
$0 < a \leq 20$	4
$20 < a \leq 40$	11
$40 < a \leq 60$	9
$60 < a \leq 80$	6

Kim works out an estimate for the mean.
Here is her working.

$$\frac{4 + 11 + 9 + 6}{4} = \frac{30}{4} = 7.5$$

Kim's method is wrong.
Explain why.

(1)

(Total for Question 3 is 1 mark)

- 4 The table shows information about the weights of 20 apples.

Weight (w grams)	Frequency
$40 < w \leq 50$	3
$50 < w \leq 60$	4
$60 < w \leq 70$	7
$70 < w \leq 80$	4
$80 < w \leq 90$	2

Show that an estimate for the mean weight is 64 g.

(3)

(Total for Question 4 is 3 marks)

- 5 The table gives information about the heights, h cm, of 50 sunflowers in a garden centre.

Height (h cm)	Frequency
$50 < h \leq 100$	4
$100 < h \leq 150$	11
$150 < h \leq 200$	20
$200 < h \leq 250$	15

- (a) Calculate an estimate for the mean height.

..... cm
(3)

- (b) Omar says,
 “The tallest sunflower is 250 cm tall.”
 Is Omar correct?
 Give a reason for your answer.

.....

 (1)

(Total for Question 5 is 4 marks)

- 6** The table shows information about the times, in minutes, that 70 visitors spent in a museum.

Time (t minutes)	Frequency
$0 < t \leq 30$	8
$30 < t \leq 60$	21
$60 < t \leq 90$	26
$90 < t \leq 120$	15

- (a) Calculate an estimate for the mean time.
Give your answer correct to 3 significant figures.

..... minutes
(3)

- (b) The museum says,
“More than a quarter of our visitors stay for longer than 90 minutes.”
Is the museum correct?
You must show your working.

(1)

(Total for Question 6 is 4 marks)

- 7** The table gives information about the number of hours, h , that 25 volunteers worked in a charity shop last month.

Number of hours (h)	Frequency
$0 < h \leq 4$	5
$4 < h \leq 8$	10
$8 < h \leq 12$	6
$12 < h \leq 16$	4

- (a) Work out an estimate for the mean number of hours worked.

..... hours
(3)

- (b) The charity says,
 “On average, each volunteer worked more than 8 hours last month.”
 Does your answer to part (a) support this statement?
 You must give a reason for your answer.

(1)
(Total for Question 7 is 4 marks)
