



4.18F Averages from Frequency Tables: Foundation Tier Practice

EDEXCEL Edexcel 1MA1 · Calculator allowed · about 50 minutes

Total Marks

Name: _____ Date: ____ / ____ / ____

Answer ALL questions. Show all your working.

- 1** A survey asks 7 pupils how many books they read last month. The frequency table is:
Number of books: 0, 1, 2, 3
Frequency: 2, 3, 1, 1
Write down the mode number of books.

(Total for Question 1 is 1 mark)

- 2** The ages of 8 children at a club are recorded as:
Ages: 6, 7, 8
Frequency: 2, 3, 3
Write down the median age.

(Total for Question 2 is 1 mark)

- 3** A class recorded the number of pets they have. The frequency table is:
Pets: 0, 1, 2
Frequency: 5, 4, 1
Work out the mean number of pets. Give your answer as a decimal to 1 decimal place.

(Total for Question 3 is 2 marks)

- 4 The number of goals scored by a youth team in 12 matches is shown in the table:

Goals: 0, 1, 2, 3

Frequency: 4, 5, 2, 1

Find the median number of goals.

(Total for Question 4 is 2 marks)

- 5 A food bank recorded how many canned goods families collected. The table is:

Cans: 1, 2, 3, 4

Frequency: 3, 6, 2, 1

Calculate the mean number of cans. Give your answer as a decimal to 1 decimal place.

(Total for Question 5 is 3 marks)

- 6 Here is a grouped frequency table showing time in minutes taken by 15 students to complete a quiz.

Time (minutes): 0-4, 5-9, 10-14

Frequency: 4, 7, 4

Use the midpoints of the groups to estimate the mean time. Give your answer to 1 decimal place.

(Total for Question 6 is 4 marks)

- 7 A shop recorded how many apples customers bought. The table is:

Apples: 1, 2, 3

Frequency: 8, 5, 3

Find the modal class and the mode number of apples.

(Total for Question 7 is 3 marks)

8 The table shows the number of texts sent by 20 pupils in a day.

Texts: 0, 1, 2, 3

Frequency: 6, 8, 4, 2

Calculate the median number of texts sent.

(Total for Question 8 is 4 marks)

9 A teacher records the scores out of 10 for 18 pupils. The frequency table is:

Score: 2, 4, 6, 8

Frequency: 2, 6, 7, 3

(a) Work out the mean score. Give your answer to 2 decimal places.

(b) State the mode score.

(a) Work out the mean score. Give your answer to 2 decimal places. (4)

(b) State the mode score. (2)

(Total for Question 9 is 6 marks)

Mark scheme · 4.18F Averages from Frequency Tables: Foundation Tier Practice

Question 1

- **B1** 1 cao
- **Answer: 1** (one book is the mode because frequency 3 is highest).

Question 2

- **B1** 7 cao
- **Answer: 7** (the ordered data are 6,6,7,7,7,8,8,8; middle two are 7 and 7 so median 7).

Question 3

- **M1** correct method: $(0 \times 5 + 1 \times 4 + 2 \times 1) / 10$ or equivalent
- **A1** 0.6 awrt
- **Answer: 0.6** (total pets $0 \times 5 + 1 \times 4 + 2 \times 1 = 6$; mean = $6/10 = 0.6$).

Question 4

- **M1** identify middle positions 6th and 7th in ordered list of 12 scores
- **A1** 1 cao
- **Answer: 1** (ordered list has 4 zeros then 5 ones then 2 twos then 1 three; 6th and 7th values are both 1).

Question 5

- **M1** correct method: $(1 \times 3 + 2 \times 6 + 3 \times 2 + 4 \times 1) / 12$
- **M1** calculation of total = $3 + 12 + 6 + 4 = 25$
- **A1** 2.1 awrt
- **Answer: 2.1** (total cans 25; mean = $25/12 = 2.083...$ rounded to 1 dp = 2.1).

Question 6

- **M1** use midpoints 2, 7, 12 and multiply by frequencies
- **M1** correct totals: $2 \times 4 + 7 \times 7 + 12 \times 4 = 8 + 49 + 48 = 105$
- **M1** divide by 15: $105 / 15 = 7$
- **A1** 7.0 awrt
- **Answer: 7.0 minutes** (midpoint method gives total 105; mean = $105/15 = 7.0$).

Question 7

- **B1** modal class 1 apple cao
- **M1** state mode as 1 because frequency 8 is highest
- **A1** mode 1 cao
- **Answer: Modal class: 1 apple. Mode: 1 apple** (frequency 8 is highest).

Question 8

- **M1** identify middle positions 10th and 11th in 20 items
- **M1** locate 10th and 11th values in cumulative: six 0s then eight 1s gives positions 7-14 as 1
- **M1** state both middle values are 1
- **A1** 1 cao
- **Answer: 1** (the 10th and 11th values are both 1 so median = 1).

Question 9

- (a) **M1** correct method: sum of score*frequency, e.g. $2*2 + 4*6 + 6*7 + 8*3$
- (a) **M1** correct total: $4 + 24 + 42 + 24 = 94$
- (a) **M1** divide by 18: $94 / 18$
- (a) **A1** 5.22 awrt
- (a) **Answer: 5.22 (total 94; mean = $94/18 = 5.222...$ rounded to 2 dp = 5.22).**
- (b) **B1** identify mode as 6 (highest frequency 7) oe
- (b) **A1** 6 cao
- (b) **Answer: Mode: 6 (frequency 7 is highest).**