

Surname	
Other Names	
Candidate's Signature	

GCSE 9 - 1 Questions

Averages from Frequency Tables 2

Calculator Allowed

INSTRUCTIONS TO CANDIDATES

- Write your name in the space provided.
- Write your answers in the spaces provided in this question paper.
- Answer ALL questions.
- Any working should be clearly shown in the spaces provided since marks may be awarded for partially correct solutions.
- You should have a ruler, compass and protractor where required.

Total Marks :

- 1) Three hundred members of a gym were asked how often they had visited the gym during the last week.

The results are shown in the frequency table below.

Visits	Number of Members	Visits \times Number of Members
0	11	0
1	42	42
2	122	244
3	66	
4	59	
	Total = 300	Total =

- (a) Complete the table above.

1

- (b) Find the mean number of visits made by the members.

2

- 2) Fifty students completed a fitness test known as a “Beep Test”.
The fitness levels they achieved are shown in the frequency table below.

Fitness Level	Number of Students	Fitness Level \times Number of Students
5	4	20
6	5	30
7	9	63
8	21	
9	6	
10	5	
	Total = 50	Total =

(a) Complete the table above.

1

(b) Find the mean fitness level achieved by these students.

2

3) An estate agency recorded the prices of the houses they sold in April.

The prices varied from £125 000 to £250 000.

The prices are shown in the frequency table below.

Price (£ thousands)	Frequency	Price (£ thousands) \times Frequency
125	5	625
150	8	1200
175	12	2100
200	7	
225	5	
250	3	
	Total = 40	Total =

Complete the frequency table **and** calculate the mean house price.

4) A group of 40 students sit a test.

The marks scored by the students in the test are shown in the frequency table below.

<i>Mark</i>	<i>Frequency</i>
14	6
15	10
16	7
17	7
18	5
19	3
20	2

(a) Write down the modal mark.

1

(b) Find the probability of choosing a student from this group with a mark of 19.

1

(c) Complete the table below and calculate the mean mark for the group.

<i>Mark</i>	<i>Frequency</i>	<i>Mark</i> × <i>Frequency</i>
14	6	84
15	10	150
16	7	112
17	7	119
18	5	
19	3	
20	2	
Total = 40		Total =

3

- 5) Farmer Jones has seventy dairy cows.
One day he recorded the amount of milk produced by each cow.
The frequency table below shows the results.

Amount of Milk (litres)	Number of Cows
5	2
10	3
15	7
20	17
25	21
30	13
35	7
	Total = 70

- (a) Write down the modal amount of milk produced.

Answerlitres [1]

- (b) Complete the table below.

Amount of Milk (litres)	Number of Cows	Amount of Milk \times Number of Cows
5	2	10
10	3	30
15	7	105
20	17	340
25	21	525
30	13	
35	7	
	Total = 70	Total =

1

- (c) Find the mean amount of milk produced.

Answerlitres [3]

- 6) Two hundred teenagers were asked how many songs they had downloaded during the previous week.

The frequency table below shows their responses.

Number of Songs	Frequency
5	38
6	72
7	53
8	30
9	7
	Total = 200

- (a) Write down the modal number of songs downloaded.

Answersongs [1]

- (b) Find the range of the number of songs downloaded.

Answer[1]

- (c) Complete the table below **and** find the mean number of songs downloaded.

Number of Songs	Frequency	Number of Songs × Frequency
5	38	190
6	72	432
7	53	371
8	30	
9	7	
	Total = 200	Total =

Answersongs [3]

7) Thirty students were given homework.

The frequency table shows the length of time each student spent on the homework.

Time (minutes)	Frequency
5	1
10	6
15	11
20	7
25	5
	Total = 30

(a) Write down the modal time spent on the homework.

Answer[1]

(b) What is the probability that a student, picked at random, spent 20 minutes on the homework?

Answer[1]

(c) Complete the table below **and** find the mean time spent on the homework.

Time (minutes)	Frequency	Time \times Frequency
5	1	5
10	6	60
15	11	165
20	7	
25	5	
	Total = 30	Total =

Answerminutes [3]

- 8) A company manufactures boxes of tacks and claims that there are “on average” 60 tacks per box.

This claim is tested by counting the number of tacks in a sample of 100 boxes.

The results are shown below.

Number of tacks	Frequency	Number of tacks \times Frequency
57	7	
58	13	
59	21	
60	24	
61	19	
62	12	
63	4	
Totals	100	

- (a) Find the mean number of tacks per box.

3

- (b) Is the company’s claim reasonable?

You must give a reason for your answer.

1

- 9) A record was kept of the number of packets of crisps sold each day in a school shop. The results are shown below.

Number of packets	Number of days
20 – 44	2
45 – 69	3
70 – 94	4
95 – 119	7
120 – 144	10
145 – 169	3
170 – 194	1

Calculate the mean number of packets sold.

(4)

10) On a given day a company records the number of minutes that each employee is late.

The results are shown in the frequency table below.

<i>Number of minutes late</i>	<i>Frequency</i>
0–4	42
5–9	18
10–14	23
15–19	16
20–24	8
25–29	5
30–34	3
35–39	1

Calculate the mean number of minutes that an employee is late.

5

- 11) A survey was carried out to find the waiting time for telephone calls to be answered at a call centre. The results are shown below.

<i>Time in seconds</i>	<i>Number of calls</i>
20 – 34	9
35 – 49	10
50 – 64	14
65 – 79	19
80 – 94	22
95 – 109	35
110 – 124	21
125 – 139	20

Calculate the mean waiting time in seconds.

5

- 12) The table below illustrates the amount of money saved by 200 children over the past year.

<i>Money saved (£)</i>	<i>Frequency</i>
0 – 9	20
10 – 19	40
20 – 29	36
30 – 39	44
40 – 49	13
50 – 59	22
60 – 69	10
70 – 79	15

Calculate the mean amount of money saved by the children.

5

- 13) A dental practice keeps a record of the number of patients visiting the surgery over a period of time.

The information is shown below.

<i>Number of patients</i>	<i>Number of days</i>
6 – 10	4
11 – 15	8
16 – 20	10
21 – 25	18
26 – 30	7
31 – 35	3



Taking the number of patients to be at the mid-point of each interval, calculate the mean number of patients visiting the surgery per day.

5

14) A company keeps a record of how many days each employee is absent over a two-year period.

The results are shown in the frequency table below.

Number of days absent	Frequency
0 – 4	14
5 – 9	17
10 – 14	8
15 – 19	4
20 – 24	2

Calculate the mean number of days an employee is absent.

5

15)

The data shows the price of pairs of shoes that were sold at a certain shop last Saturday morning.

£27, £29, £29, £39, £29, £29, £29, £29,
 £49, £29, £34, £32, £29, £49, £29, £29,
 £32, £34, £32, £29, £29, £49, £49, £49,
 £29, £27, £27, £29, £29, £49, £29

a) Fill in the frequency in the table.

Price of shoes (£)	Frequency (f)		
23 - 28			
29 - 34			
35 - 40			
41 - 46			
47 - 54			

b) By using the table, find the mean of the shoe sizes. Write your answer to the nearest penny.

[5]

- 16) 28 students timed their journeys from home to college.
The results, in minutes, are listed below.

14	34	22	13	17	15	36
17	8	14	24	2	25	17
31	17	20	23	10	28	19
21	22	28	30	21	16	19

- (a) Construct a frequency table for the above data using class intervals

1–5, 6–10, 11–15, etc.

2

- (b) Using the frequency table in part (a), calculate the mean number of minutes per journey.

4

- 17) An article in a Sunday magazine was analysed to provide a measure of the reading difficulty factor. The number of words in each of the first thirty sentences was recorded.

21	22	28	20	17	8	24	17	17	22
5	21	10	17	25	24	14	36	10	34
28	6	23	31	39	9	8	15	6	14

- (a) Construct a frequency table with class intervals

1–5, 6–10, 11–15 etc.

[2]

- (b) Calculate the mean number of words per sentence.

[4]