

FREQUENCY TABLES – PRACTICE QUESTIONS
CALCULATOR ALLOWED



1.

Andrea went to a car park and counted the colours of each of the cars. The results are shown in the below frequency table.

Colour	Frequency
White	12
Black	7
Red	6
Blue	4
Yellow	1

(a) How many cars were white?

12

(b) How many cars were in the car park in total?

$$12 + 7 + 6 + 4 + 1 = 30$$

(c) If Andrea chose a car at random from the car park, what would be the probability that it was black?

$$\frac{7}{30}$$

2.

Ben asked everybody in his class how many pets they have. He represented the results in a frequency table.

Number of pets	Frequency
0	6
1	3
2	7
3	4
4	4
5	1

(a) What fraction of the class have at least one pet?

$$\frac{19}{25}$$

(b) What is the mode?

2

(c) What is the median?

2

(d) What is the mean number of pets that the class have?

$$\begin{array}{l}
 0 \times 6 = 0 \\
 1 \times 3 = 3 \\
 2 \times 7 = 14 \\
 3 \times 4 = 12 \\
 4 \times 4 = 16 \\
 5 \times 1 = 5
 \end{array}
 + = \frac{50}{25} = \textcircled{2}$$

3.

Eleanor asked 35 people how many different houses they have lived in. She represented the results in a frequency table.

Number of houses	Frequency
1	6
2	10
3	8
4	5
5	4
6	2

(a) What is the median?

3

(b) What is the mode?

2

(c) What is the mean?

$$(1 \times 6) + (2 \times 10) + (3 \times 8) + (4 \times 5) + (5 \times 4) + (6 \times 2) \\ = \frac{102}{35} = 2.9...$$

4.

Florence ran in 40 100-metre races last year. Her times are summarised in the below frequency table.

Time (seconds)	Frequency
15	2
16	5
17	9
18	11
19	8
20	5

(a) What is the mode?

18

(b) What is the median?

18

(c) What is the mean?

$$(15 \times 2) + (16 \times 5) + (17 \times 9) + (18 \times 11) + (19 \times 8) + (20 \times 5) \\ = \frac{713}{40} = 17.825$$

5.

Corey bought 12 packets of crisps and noted down how many crisps were in each packet.

His results were:

18 20 20 16 19 15 15 21 18 20 17 20

(a) Complete the frequency table.

Number of crisps	Frequency
15	2
16	1
17	1
18	2
19	1
20	4
21	1

(b) Work out the mean number of crisps in a packet.

$$(15 \times 2) + (16 \times 1) + (17 \times 1) + (18 \times 2) + (19 \times 1) + (20 \times 4) + (21 \times 1) \\ = \frac{219}{12} = 18.25$$

6.

Dylan took 15 spelling tests.

Each test was out of 20.

His results were:

18 16 17 18 13 15 20 20 20 20 16 14 18 20 15

(a) Complete the frequency table.

Score	Frequency
13	1
14	1
15	2
16	2
17	1
18	3
19	0
20	5

(b) Work out Dylan's mean score.

$$(13 \times 1) + (14 \times 1) + (15 \times 2) + (16 \times 2) + (17 \times 1) + (18 \times 3) + (20 \times 5) \\ = \frac{260}{15} = 17.3$$

7.

The below frequency table shows the weights, in kilograms, of a group of people.

Weight (kg)	Frequency	Midpoint	F x MP
$20 < x \leq 30$	1	25	25
$30 < x \leq 40$	3	35	105
$40 < x \leq 50$	5	45	225
$50 < x \leq 60$	3	55	165
$60 < x \leq 70$	3	65	195

(a) What is the modal class?

$$40 < x \leq 50$$

(b) Which class contains the median weight?

$$40 < x \leq 50$$

(c) Estimate the mean weight.

$$25 + 105 + 225 + 165 + 195 = 715$$

$$715 \div 15 = 47.6$$

8.

The below frequency table shows the marks, out of 100, that a group of students scored in a maths test.

Mark	Frequency	Midpoint	F x MP
$0 < x \leq 20$	2	10	20
$20 < x \leq 40$	7	30	210
$40 < x \leq 60$	6	50	300
$60 < x \leq 80$	4	70	280
$80 < x \leq 100$	1	90	90

(a) What is the modal class?

$$20 < x \leq 40$$

(b) Which class contains the median mark?

$$40 < x \leq 60$$

(c) Estimate the mean mark.

$$20 + 210 + 300 + 280 + 90 = 900$$

$$900 \div 20 = 45$$

(d) Explain why your answer to part (c) is an estimate.

Because I used midpoints.

9.

The below frequency table shows the number of apples harvested from 60 apple trees.

Apples harvested	Frequency	MP	F x MP
$0 < x \leq 40$	9	20	180
$40 < x \leq 80$	10	60	600
$80 < x \leq 120$	20	100	2000
$120 < x \leq 160$	16	140	2240
$160 < x \leq 240$	5	200	1000

(a) How many apple trees harvested more than 80 apples?

$$20 + 16 + 5 = 41$$

(b) Which class contains the median?

$$80 < x \leq 120$$

(c) What is the modal class?

$$80 < x \leq 120$$

(d) Estimate the mean number of apples harvested by an apple tree.

$$180 + 600 + 2000 + 2240 + 1000 = 6020$$

$$6020 \div 60 = 100.3$$

10.

The below frequency table shows the prices of 100 used cars.

Price (£)	Frequency	MP	MP x F
$1,000 < x \leq 2,000$	32	1500	48000
$2,000 < x \leq 3,000$	25	2500	62500
$3,000 < x \leq 4,000$	18	3500	63000
$4,000 < x \leq 10,000$	14	7000	98000
$10,000 < x \leq 20,000$	11	15000	165000

(a) What is the modal class?

$$1,000 < x \leq 2,000$$

(b) Which class contains the median?

$$2,000 < x \leq 3,000$$

(c) Estimate the mean price of a used car.

$$48000 + 62500 + 63000 + 98000 + 165000$$

$$= 436500$$

$$\frac{436500}{100} = 4365$$

(d) Explain why your answer to part (c) is an estimate.

Because I used midpoints.

11.

The salaries of the employees at a business are represented in the frequency table below:

Salary (£)	Frequency	MP	F x MP
14,000 < x ≤ 16,000	8	15000	120000
16,000 < x ≤ 18,000	7	17000	119000
18,000 < x ≤ 20,000	4	19000	76000
20,000 < x ≤ 30,000	4	25000	100000
30,000 < x ≤ 40,000	2	35000	70000

(a) How many employees work for the business?

25

(b) What is the modal class?

14,000 < x ≤ 16,000

(c) Which class contains the median salary?

16,000 < x ≤ 18,000

(d) Estimate the mean salary.

$$120000 + 119000 + 76000 + 100000 + 70000$$

$$= \frac{485,000}{25} = \text{£}19,400$$

12.

150 people solved a puzzle.

The times taken are represented in the frequency table below.

Time taken (minutes)	Frequency	MP	F x MP
10 < x ≤ 20	12	15	180
20 < x ≤ 25	26	22.5	585
25 < x ≤ 30	27	27.5	742.5
30 < x ≤ 40	48	35	1680
40 < x ≤ 60	37	50	1850

(a) How many people took more than half an hour to solve the puzzle?

$$48 + 37 = 85$$

(b) Oliver took 34 minutes to solve the puzzle.

He says "I solved the puzzle quicker than the average person".

Do you agree with Oliver? Show your working.

$$180 + 585 + 742.5 + 1680 + 1850 = 5037.5$$

$$5037.5 \div 150 = \underline{33.583 \text{ minutes}}$$

I disagree with Oliver, because the estimated mean of the 150 people is less than 34 minutes.

13.

The ages of the members of a youth club are represented in the frequency table below.

Age	Frequency
9	5
10	12
11	9
12	13
13	6
14	4

(a) How many members are there at the youth club?

49

(b) How many members of the youth club are 12 or older?

$$13 + 6 + 4 = 23$$

(c) What is the mode?

12

(d) What is the median?

11

14.

The number of runs scored by a cricket team during a season is represented in the frequency table below.

Number of runs	Frequency	MP	FXMP
$0 < x \leq 100$	16	50	800
$100 < x \leq 300$	11	200	2200
$300 < x \leq 500$	6	400	2400
$500 < x \leq 1,000$	8	750	6000
$1,000 < x \leq 2,000$	3	1500	4500

(a) What fraction of the team scored more than 500 runs during the season?

Give your answer in its simplest form.

$$\frac{11}{44} = \frac{1}{4}$$

(b) Which class contains the median?

$$100 < x \leq 300$$

(c) Estimate the mean number of runs scored. Give your answer to the nearest run.

$$800 + 2200 + 2400 + 6000 + 4500 = 15900$$

$$\frac{15900}{44} = 361.36 = 361 \text{ runs}$$

(d) Explain why your answer to part (c) is an estimate.

Because I used midpoints.

15.

The frequency table below shows the number of goals scored by a football team in their last 20 games.

Number of goals	Frequency
0	5
1	8
2	3
3	2
4	1
5	1

(a) Work out the total number of goals the team scored in their last 20 games.

$$(0 \times 5) + (1 \times 8) + (2 \times 3) + (3 \times 2) + (4 \times 1) + (5 \times 1) \\ = 29 \text{ goals}$$

(b) Work out the mean number of goals the team scored in their last 20 games.

$$\frac{29}{20} = 1.45$$

16.

The value, in pounds, of the items at a shop are shown in the below frequency table.

Price (£)	Frequency	MP	F x MP
$0 < x \leq 5$	18	2.50	45
$5 < x \leq 10$	15	7.50	112.5
$10 < x \leq 20$	10	15	150
$20 < x \leq 50$	2	35	70
$50 < x \leq 100$	1	75	75

(a) What is the modal class?

$$0 < x \leq 5$$

(b) Which class contains the median?

$$5 < x \leq 10$$

(c) Estimate the total value of the items.

$$45 + 112.5 + 150 + 70 + 75 = \text{£}452.50$$

(d) Darren says "The range of the values of the items in the shop is £40".

Explain why Darren is wrong.

Darren is wrong because the smallest possible range is £45 (£50 - £5).