

Name: _____

Exam Style Questions

Mean from a frequency table



Corbettmaths

Ensure you have: Pencil, pen, ruler, protractor, pair of compasses and eraser

You may use tracing paper if needed

Guidance

1. Read each question carefully before you begin answering it.
2. Don't spend too long on one question.
3. Attempt every question.
4. Check your answers seem right.
5. Always show your workings

Revision for this topic

www.corbettmaths.com/contents

Video 54



1. The table shows the number of sweets in 20 bags.



Number of sweets x	Frequency f	fx
23	1	$23 \times 1 = 23$
24	4	$24 \times 4 = 96$
25	9	$25 \times 9 = 225$
26	3	$26 \times 3 = 78$
27	3	$27 \times 3 = 81$
		$\underline{\quad}$
		503

Calculate the mean.

$$503 \div 20 = 25.15$$

$$\underline{\underline{25.15}}$$

(3)

2. Robbie played twenty football matches for his school team. The number of goals scored in each game are shown in the table.



Goals x	Number of matches f	fx
0	3	$0 \times 3 = 0$
1	5	$1 \times 5 = 5$
2	9	$2 \times 9 = 18$
3	1	$3 \times 1 = 3$
4	+ 2	$4 \times 2 = 8$

$\rightarrow \overline{20}$

$\overline{34}$

Calculate the mean number of goals scored per game.

$$34 \div 20 = 1.7$$

$$20 \overline{) 34.00} \begin{array}{r} 01.7 \\ \underline{20} \\ 14 \\ \underline{14} \\ 00 \end{array}$$

1.7

(3)

3. Lily visits an arcade while on holiday in Weston-Super-Mare. She plays 100 games and wins tickets that she can exchange for prizes. The table below shows the results.

Number of tickets won x	Frequency f	fx
0	2	0
1	11	11
2	28	56
3	18	54
4	11	44
5	15	75
6	10	60
7	2	14
8	3	24
	100	338

- (a) Work out the total of tickets won.

$$338 \div 100$$

$$3.38$$

(2)

- (b) Calculate the mean number of tickets per game.

(2)

4. Thirty students were asked how many cats they owned. The results are shown in the table.

Number of cats x	Number of children f
0	6
1	13
2	7
3	3
4	1

f_x
 0
 13
 14
 9
 4
 + 4

 40

~~Cats~~ 30

Calculate the mean number of cats owned per child.

$$40 \div 30 = 1.333\dots$$

$$= 1.\dot{3}$$

$$\underline{1.33} \text{ to 2 dp.}$$

(3)

5. An internet company collected data about the number of internet devices in each of 50 households. The table shows the results.

Number of devices	Number of households	f_x
0	1	0
1	1	1
2	2	4
3	4	12
4	9	36
5	13	65
6	10	60
7	7	49
8	3	24
	50	251

- (a) Work out the total number of internet devices in these 50 households

$$\begin{array}{r} 251 \\ \hline \end{array}$$


(2)

- (b) Calculate the mean number of internet devices per household.

$$251 \div 50 = 5.02$$

$$\begin{array}{r} 5.02 \\ \hline \end{array}$$

(2)

6. Alex works for the council.
 He records the number of people in cars travelling down a street over one hour.
 Here are his results.

Number of people in each car x	Number of cars f	fx
1	41	41
2	54	108
3	32	96
4	20	80
5	3	15
	150	340

- (a) Work out the total number of cars that travelled down the street.

$$\begin{array}{r} 150 \\ \hline \end{array} \quad (1)$$

- (b) Work out the total number of people that travelled in cars down the street.

$$\begin{array}{r} 340 \\ \hline \end{array} \quad (2)$$

- (c) Work out the mean number of people travelling in each car.

$$340 \div 150 = 2.2\dot{6}$$

$$\begin{array}{r} 2.267 \text{ to } 3 \text{ d.p.} \\ \hline \end{array} \quad (2)$$



7. Simon rolls a fair six-sided dice 30 times.
He records the results in a table, however misses two of the frequencies.

Number	Frequency
1	6
2	3
3	5
4	8
5	2
6	6

$f \times d$

6
6
15

+ 36

105

30

} 42

The mean result is 3.5

Work out the two missing numbers.

$$3.5 \times 30 = 105$$

$$6 + 6 + 15 + 36 = 63$$

$$105 - 63 = 42$$

$$4 \times \boxed{8} = 32$$

$$5 \times \boxed{2} = 10$$

} 42

$$6 + 3 + 5 + 8 + 2 + 6 = \underline{\underline{30}}$$

(4)

8. The star rating, from 1 to 5, of hotels in a city are summarised below.



Star rating x	Frequency f	fx
1	4	4
2	17	34
3	23	69
4	x	$4x$
5	18	90
	<u>$62+x$</u>	<u>$197+4x$</u>

The mean star rating of a hotel in the city is 3.575

Calculate the value of the missing frequency, x .

$$\frac{197+4x}{62+x} = 3.575$$

$$197 + 4x = 3.575(62+x)$$

$$197 + 4x = 221.65 + 3.575x$$

$$0.425x = 24.65$$

$$x = 58$$

58

(4)