

Name:

Exam Style Questions

Mean, Median,
Mode and Range



Corbettmaths

Equipment needed: Calculator, pen

Guidance

1. Read each question carefully before you begin answering it.
2. Check your answers seem right.
3. Always show your workings

Video Tutorials

Mode



Median



Mean



Range



Answers and Video Solutions



1. Here is a list of numbers



3 3 4 5 5 5 5 6 7 8

Write down the mode of the numbers.

5

(1)

2. Five friends play a game.
Here are their scores.



80 120 160 60 250

Work out the median.

60 80 120 160 250

120

(2)

3. Here is a list of numbers.



3 2 6 11 13

$$3 + 2 = 5$$

$$5 + 6 = 11$$

$$11 + 11 = 22$$

$$22 + 13 = 35$$

(a) Work out the mean

$$3 + 2 + 6 + 11 + 13 = 35$$

$$35 \div 5$$

7

(2)

(b) Work out the range

$$13 - 2$$

11

(1)

4. James has a spinner that has sections labelled 1 to 5. He spins the spinner 10 times.



Here are his scores.

1 4 4 2 3 4 5 1 4 1

- (a) Find the mode.

$$\begin{array}{r} 4 \\ \hline \end{array} \quad (1)$$

- (b) Work out the mean.

$$1 + 4 + 4 + 2 + 3 + 4 + 5 + 1 + 4 + 1 = 29$$

$$29 \div 10 = 2.9$$

$$\begin{array}{r} 2.9 \\ \hline \end{array} \quad (2)$$

- (c) Work out the range.

$$5 - 1 = 4$$

$$\begin{array}{r} 4 \\ \hline \end{array} \quad (2)$$

5. Simone records the number of minutes she spends on her mobile phone over 7 days.



8 5 13 6 24 19 10

Find the median.

~~8~~ ~~5~~ ~~6~~ 10 ~~13~~ ~~19~~ ~~24~~

$$\begin{array}{r} 10 \\ \hline \end{array} \text{minutes} \quad (2)$$

6. Here are the ages of 9 children at a birthday party.



10 12 13 10 11 14 15 10 12

(a) Find the mode.

$$\begin{array}{r} 10 \\ \hline \end{array} \quad (1)$$

(b) Find out the median.

10 10 10 11 12 12 13 14 15

$$\begin{array}{r} 12 \\ \hline \end{array} \quad (2)$$

(c) Work out the range.

$$15 - 10$$

$$\begin{array}{r} 5 \\ \hline \end{array} \quad (2)$$

(d) Work out the mean.

$$10 + 10 + 10 + 11 + 12 + 12 + 13 + 14 + 15 = 107$$

$$107 \div 9 = 11.8\dot{8}$$

$$\begin{array}{r} 11.8\dot{8} \\ \hline \end{array} \quad (2)$$

7. A football team played six games.



Here are the number of goals they scored in each game:

6 0 3 2 2 5

(a) Work out the median number of goals scored.

~~6~~ ~~0~~ 2 3 ~~2~~ ~~5~~

2.5
(2)

(b) Work out the mean number of goals scored.

$$0 + 2 + 2 + 3 + 5 + 6 = 18$$
$$18 \div 6 = 3$$

3
(2)

The football team play one more game.

The mean number of goals scored increases to 4.

(c) Work out the number of goals scored in the seventh game.

$$4 \times 7 = 28$$
$$28 - 18 = 10$$

10
(2)

10. Miss Jones gives her class a test.
The test is out of 40 marks.



Here are their scores.

31 29 20 35 32 38 32
✓ x x ✓ ✓ ✓ ✓

- (a) Work out the mode.

$$\begin{array}{r} 32 \\ \hline \end{array} \quad (1)$$

- (b) Work out the median.

20 29 31 32 32 35 38

$$\begin{array}{r} 32 \\ \hline \end{array} \quad (2)$$

- (c) Work out the range.

$$38 - 20$$

$$\begin{array}{r} 18 \\ \hline \end{array} \quad (2)$$

The pass mark for the test is 75%.

- (d) How many students pass the test?

$$\begin{aligned} 40 \div 4 &= 10 \\ 10 \times 3 &= 30 \end{aligned}$$

$$\begin{array}{r} 5 \\ \hline \end{array} \quad (2)$$

11. Hannah is recording the number of letters in each word in an article.



These are the first ten lengths.

3 4 5 6 2 4 3 7 3 6

(a) Work out the median.

~~3~~ ~~4~~ ~~5~~ ~~6~~ 4 4 ~~5~~ ~~6~~ ~~6~~ ~~7~~

4

(2)

(b) Calculate the mean.

$$3 + 4 + 5 + 6 + 2 + 4 + 3 + 7 + 3 + 6 = 43$$

$$43 \div 10$$

4.3

(2)

The 11th word has 4 letters.

(c) Tick the box which describes what affect this will have on the mean.

The mean will decrease

The mean will remain the same

The mean will increase

(1)

(d) Tick the box which describes what affect this will have on the median.

The median will decrease

The median will remain the same

The median will increase

~~3~~ ~~4~~ ~~3~~ ~~3~~ 4 4 4 ~~5~~ ~~6~~ ~~6~~ ~~7~~

(1)

12. Jakub records the temperature at midnight over 6 days.



-7°C 2°C -1°C -8°C 5°C 3°C

(a) Work out the mean temperature.

$$(-7) + 2 + (-1) + 5 + (-8) + 3 = -6$$
$$-6 \div 6 = -1^{\circ}\text{C}$$

$\underline{\quad -1 \quad}^{\circ}\text{C}$
(2)

(b) Work out the median temperature.

~~-8~~ ~~-7~~ -1 2 ~~3~~ ~~5~~

$$-1 + 2 = 1$$
$$1 \div 2 = 0.5$$

$\underline{\quad 0.5 \quad}^{\circ}\text{C}$
(1)

(c) Work out the range of the temperature.

$$5 - (-8)$$

$\underline{\quad 13 \quad}^{\circ}\text{C}$
(2)

13. Maya is growing sunflowers.



The tallest sunflower is 1.4 metres.

The range of the heights is 58 centimetres.

Find the height of the shortest sunflower.

Include units for your answer.

$$140 - 58 = 82$$

82 cm
or

$\underline{\quad 0.82 \text{ m} \quad}$
(2)

14. Below are the ages of each person in the Jones family



8 13 16 18 43 44

(a) Work out the median age.

~~8~~ ~~13~~ 16 18 ~~43~~ ~~44~~

17
.....
(1)

(b) Work out the range of the ages.

44 - 8

36
.....
(1)

(c) Work out the range of the ages three years ago.

36
.....
(1)

15. Emily asks her friends how many times they had been to the cinema this year. Here are the results.



1 3 4 5 27

Emily says that the mean is the most suitable average to use to summarise her results.

Do you agree?
Explain your answer.

No, the mean is affected by outliers.
27 is the outlier.

(1)

16. A library is open 6 days each week, Monday to Saturday.



Here are the number of visitors to the library for the first five days of last week.

Day	Visitors
Monday	275
Tuesday	352
Wednesday	501
Thursday	444
Friday	513

the 2085

The mean number of visitors for ~~all~~ six days last week was 500

Work out how many people visited the library on Saturday.

$$6 \times 500 = 3000$$

$$3000 - 2085$$

..... 915

(3)

17. Reece has seven number cards, each with a positive number on it. Shown below are the numbers on five of the cards.



The range of the numbers is 16

The mode is 8

Work out the two missing numbers.

$$5 + 16 = 21$$

..... 8 and 21

(2)

18. Hugo has five cards.
 Shown below are the numbers on three of the cards.

12 25 17 12 14

The mean of the five numbers on the cards is 16
 The mode of the five numbers on the cards is 12

Work out the median of the five numbers on the cards.

$$16 \times 5 = 80$$

$$12 + 25 + 17 + 12 = 66$$

$$80 - 66$$

12 12 14 17 25

~~14~~ 14

 (4)

19. Shown below are five cards which are arranged in order from smallest to largest



5 5 8 8 9

The range of the cards is 4.
 The median of the cards is 8.
 The mean of the cards is 7.

$$7 \times 5 = 35$$

Work out the 4 missing numbers.

$$5 + 8 + 9 = 22$$

$$35 - 22 = 13$$

..... 5, 8, 8 and 9

(4)

20. 8 boys and 8 girls from a class run 100m.



The times taken, to the nearest second, for each girl are:

15 20 24 18 19 21 26 29

The mean of the boys' times is 25 seconds.

The range of the boys' times is 14 seconds.

Thomas says that "the boys were faster than the girls."

Is he correct?

girls mean : 21.5 seconds
girls range : 14 seconds

No, the mean time for the girls to run 100m is 21.5 seconds, which is less time than the mean time for the boys. Therefore on average the girls were faster. The ranges are equal which suggests there are no outliers affecting the mean.

(5)

21. Buster is taking part in a dog competition.
There are 6 rounds, each worth 20 points.



The mean of Buster's scores for the first 5 rounds is 13 points.

If a dog has a mean score of 14 points or more, after the 6 rounds, they will receive a prize.

Find the lowest possible number of points that Buster needs, in the final round in order to win a prize.

$$5 \times 13 = 65$$

$$6 \times 14 = 84$$

$$84 - 65 = 19$$

19

.....
(4)

22. The mean height of a squad of 24 rugby players is 185cm



A new player joins the squad who has a height of 170cm

Work out the new mean height of the squad.

$$24 \times 185 = 4440$$

$$4440 + 170 = 4610$$

$$4610 \div 25 = 184.4$$

184.4

.....cm
(3)

23. A set of six numbers have a median of 5.
All of the numbers are even.
The range of the numbers is 6.
The mode of the numbers is 4.



Write down a possible set of six numbers.

$$10 - 4 = 6$$

..... 4, 4, 4, 6, 6 and 10
(4)

24. A class of 30 boys and girls sit a test.



The mean mark for the 14 boys is 76%
The mean mark for the whole class is 78%

Work out the mean mark of the girls.

$$14 \times 76 = 1064$$
$$30 \times 78 = 2340$$

$$2340 - 1064 = 1276$$

$$1276 \div 16$$

..... 79.75 %
(4)

