

S4c Mode and modal class © BossMaths



Alpha Exercise

Find the mode or modes of each of these, where possible:

- a) 4, 5, 7, 8, 8, 8, 9, 10, 10 8
- b) 11, 14, 15, 8, 12, 9, 12, 14, 17, 12 12
- c) 7.1, 7.2, 7.4, 7.4, 7.5 7.4
- d) 19, 29, 31, 21, 28, 27, 24 No mode
- e) Summer, Summer, Autumn, Summer, Winter, Summer, Spring Summer
- f) 20, 31, 25, 45, 46, 20, 34, 31 20 and 31

S4c Mode and modal class © BossMaths



Beta Exercise 1

Score	Frequency
0	0
1	1
2	0
3	4
4	14
5	36
6	48
7	42
8	30
9	17
10	8
	200

200 students sat a test. The results are shown in the table.

What was the modal score achieved by the students?

6

← 6 was the most frequent or most common score.

48 students scored a 6, which is higher than the number of students achieving any other score.

Beta Exercise 2

Animal	Frequency
Cat	7
Dog	6
Hamster	3
Guinea pig	2
Mouse	1
Rabbit	1
Snake	1

Shaun asks everyone in his class how many pets they have, and what type of animal they are. He records the number of pets in the table shown.

(a) What is the mode?

Cat

(b) There are 28 students in Shaun's class. Explain why the frequencies **don't** add up to 28.

It is not necessarily the case that each student has one pet.



Gamma Exercise

Height, h cm	Frequency
$120 \leq h < 130$	1
$130 \leq h < 140$	4
$140 \leq h < 150$	8
$150 \leq h < 160$	16
$160 \leq h < 170$	20
$170 \leq h < 180$	23
$180 \leq h < 190$	8
	80

The heights of 80 people are measured. The results are shown in the table. What is the modal class?

$$170 \text{ cm} \leq h < 180 \text{ cm}$$



Explain the mistake

Number of crisps	Frequency
14	6
15	7
16	5
17	1
18	1
	20

The frequency table shows the number of crisps found in 20 packs of crisps.

Kieron looks at the table and says:
The modal number of crisps is 18 because 18 is the biggest number.

Lauren looks at the table and says:
The modal number of crisps is 7 because 7 is the highest frequency.

Kieron and Lauren are wrong. What is the modal number of crisps in a packet?

The modal number of crisps is 15.
More packets had 15 crisps than any other number of crisps.

S4c Mode and modal class © BossMaths

Exam-style question 1

Here are the heights, in metres, of 12 students in a class:

1.20 1.29 1.27 1.24 1.17 1.26
1.25 1.34 1.27 1.28 1.27 1.23

Find the modal height of the students.

1.27 m

Exam-style question 2

This table shows the number of goals scored by a hockey team in their first 9 matches of a tournament. In their tenth and final match of the tournament, the team scores 3 goals. What is the modal number of goals scored by the team in the tournament?

1 goal

Number of goals scored	Frequency
0	3
1	4
2	1
3	0 1
4	1

S4c Mode and modal class © BossMaths

Exam-style question 3

Bill total, £ x	Frequency
$0 < x \leq 5$	5
$5 < x \leq 10$	8
$10 < x \leq 15$	7
$15 < x \leq 20$	4
$20 < x \leq 25$	1
	25

The table shows information about the shopping bills of 25 customers at a shop one day. What is the modal class?

$$£5 < x < £10$$

Challenge

Jerry rolled a normal dice ten times. He recorded the ten scores.

- A He got an odd score six times and an even score four times.
- B He got a prime score four times.

Which number from 1 to 6 definitely *cannot* be Jerry's modal score?

The mode cannot be 2. In order to satisfy conditions A and B, Jerry must roll a 1 exactly two more times than he rolls a 2. Hence the mode cannot be 2.