1 Here are eight numbers.

4 10 9 3 4 12 5 14

1 (a) Work out the range.

[1 mark]

14 - 3 = 11

Answer 11 (1)

1 (b) Work out the median.

[2 marks]

3 4 4 5 9 10 12 14

median = $\frac{5+9}{2}$ = 7 (1)

Answer 7 (1)

2 The table shows the number of films watched one week by 30 people.

Number of films	Frequency	
0	5	
1	9	
2	8	
3	6	
4	2	

Total = 30

2 (a) Write down the modal number of films watched.

[1 mark]

Answer 1 (1)

2 (b) Work out the mean number of films watched per person.

[3 marks]

mean = $\frac{(0\times5)+(1\times9)+(2\times8)+(3\times6)+(4\times2)}{30}$ (1)

$= \frac{0+9+16+18+8}{30} = \frac{51}{30} = 1.7$ (1)

Answer 1.7 (1)

3 A company sells bags of toffees and bags of mints.

Here are the numbers of sweets in 11 bags of toffees.

55 50 49 51 55 47 54 50 49 55 57

Here are the numbers of sweets in 10 bags of mints.

46 47 47 48 48 50 53 54 54 54

49

The company claims that the average number of sweets per bag is at least 50

Using medians, is the company's claim correct for each type of sweet?

You **must** work out the median for toffees and the median for mints.

[4 marks]

Toffees Put the toffees in order (1)

47, 49, 49, 50, 50, (51), 54, 55, 55, 55, 57

(1)

Tick a box for toffees.

[✓] Yes [ ] No

Mints $\frac{48 + 50}{2} = 49$ (1)

Tick a box for mints.

[ ] Yes [✓] No (1)

4 Six positive numbers have

a mean of 10

a range of 19

Four of the numbers are 12 7 15 3

Work out the other two numbers.

[3 marks]

Total numbers : $10 \times 6 = 60$

$60 - 12 - 7 - 15 - 3 = 23$ (1)

Since range is 19, the other two numbers are

2 and 21. (since $2 + 21 = 23$)

(1)

(1)

Answer 2 and 21

5 (a) For a set of five numbers,

the mode is 8

the median is 12

Work out **one** possible set of five numbers.

[2 marks]

third number = 12

first and second number = 8

Answer 8 8 12 13 14

(2)

5 (b) Here are the heights, in centimetres, of some children.

98 103 91 85 159 102 91

Which height is an outlier?

[1 mark]

Answer 159 (1) cm

6 A school play takes place each day from Monday to Friday.

Here are the attendances on four of the days.

Monday	Tuesday	Wednesday	Thursday
72	83	88	97

For all **five** days, the mean attendance is 90

Work out the attendance on Friday.

[3 marks]

Total attendance = $90 \times 5 = 450$ (1)

Friday = $450 - (72 + 83 + 88 + 97)$

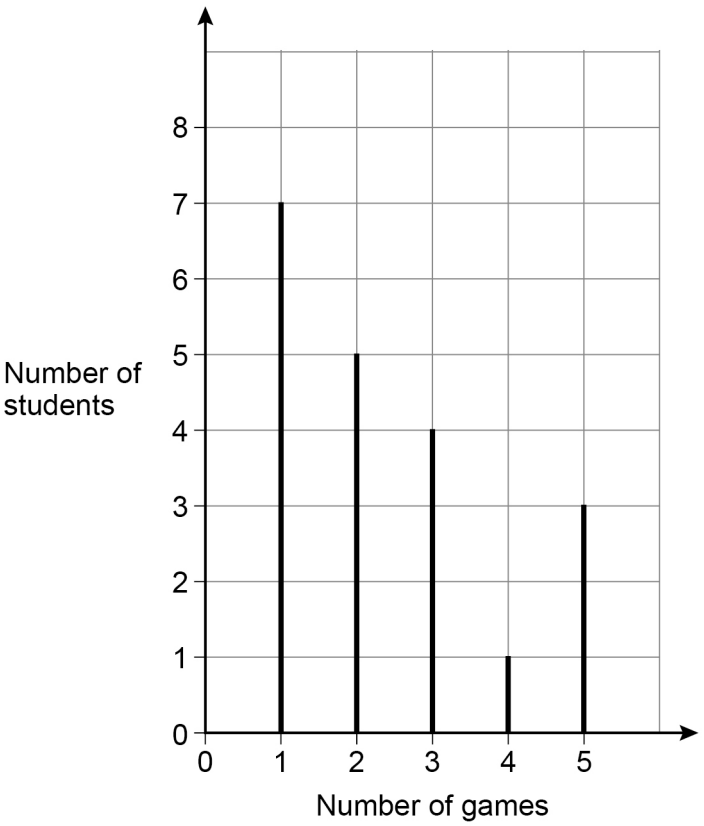
$= 450 - 340$ (1)

$= 110$ (1)

Answer 110

7 20 students are asked how many video games they played last month.

The chart shows information about the results.



7 (a) Work out the mean number of games played.

Give your answer as a decimal.

[3 marks]

$$\text{mean} = \frac{(1\times 7)+(2\times 5)+(3\times 4)+(4\times 1)+(5\times 3)}{20} \quad (1)$$

$$= \frac{7+10+12+4+15}{20} \quad (1) = \frac{48}{20}$$

$$= 2.4$$

Answer 2.4 (1)

8 Here is some data about people visiting a gym one week.

	Percentage of all visitors	Mean number of hours visiting	Range of number of hours visiting
Members	64	4	6
Guests	36	$2\frac{1}{2}$	8

Compare the data for the members with the data for the guests.

Make **three** comparisons.

[3 marks]

Comparison 1 There are more number of members than guests. (1)

Comparison 2 The average number of hours of visiting was greater for the members (1)

Comparison 3 The visiting hours of the guests were more spread out. (1)

9 Sunita is x years old.

Beth is one year younger than Sunita.

Joel is double Sunita's age.

The mean of their ages is 5

How old is **Joel**?

[5 marks]

Beth : $x - 1$

Joel : $2x$

Total their ages : $3 \times 5 = 15$ (1)

(1)

$x + x - 1 + 2x = 15$ (1)

$4x = 16$

$x = 4$ (1)

Joel = $2(4) = 8$ (1)

Answer 8

10 Here is a list of numbers.

10 8 2 11 12 15 4 4

10 (a) Write down the mode.

[1 mark]

Answer 4 (1)

10 (b) Work out the median.

[2 marks]

2 4 4 8 10 11 12 15 (1)

median = $\frac{8+10}{2}$ = 9

Answer 9 (1)

10 (c) Work out the range.

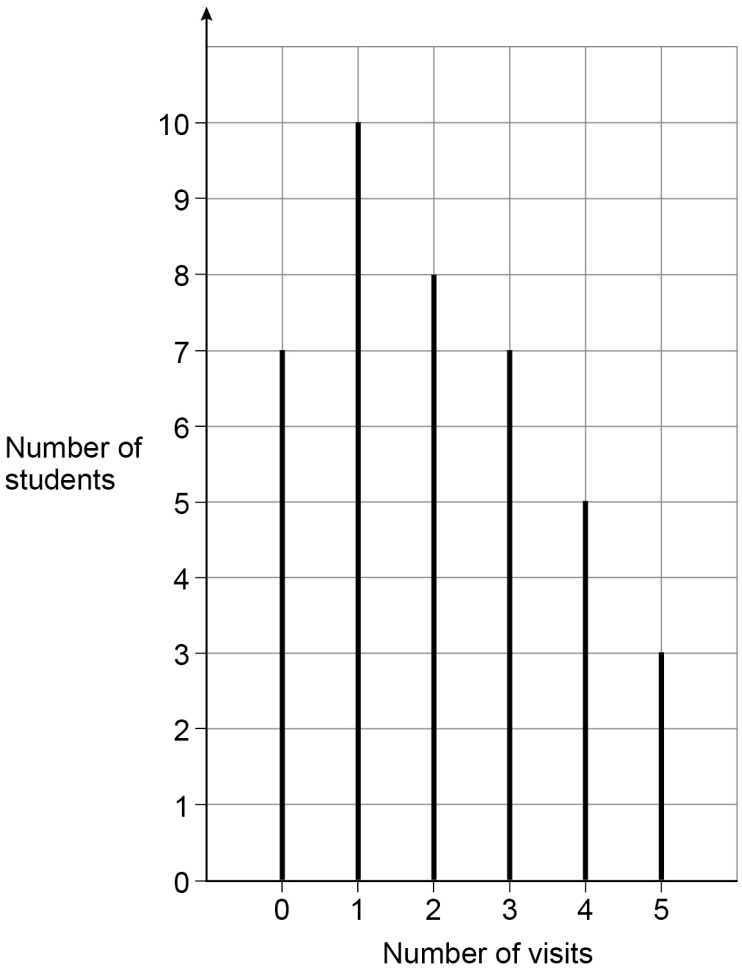
[1 mark]

15 - 2 = 13

Answer 13 (1)

11 40 students were asked the number of visits they made to a gym one week.

The chart shows information about the results.



11 (a) Write down the modal number of visits.

[1 mark]

Answer 1 (0)

11 (b) Work out the mean number of visits.

Give your answer as a decimal.

[3 marks]

$\text{mean} = \dfrac{(0\times 7)+(1\times 10)+(2\times 8)+(3\times 7)+(4\times 5)+(5\times 3)}{40}$ (1)

$= \dfrac{10+16+21+20+15}{40}$ (1)

$= \dfrac{82}{40} = 2.05$ (1)

Answer 2.05

11 (c) One of the 40 students is chosen at random.

Work out the probability that the student visited the gym **at least** once.

[2 marks]

visit at least once : $10+8+7+5+3 = 33$ (1)

$\dfrac{33}{40}$

Answer $\dfrac{33}{40}$ (1)

12 Alina and Sue play netball.

The number of goals they scored in 8 games is shown.

Alina	12	15	17	17	21	22	24	26
Sue	13	13	17	20	22	23	24	31

12 (a) Complete this table.

[2 marks]

	Range	**Median**
Alina	14 ✓(1)	19
Sue	18	21 ✓(1)

Range (Alina) : 26 − 12 = 14

Median (Sue) : $\frac{20+22}{2}$ = 21

12 (b) Which player scored the more consistent number of goals?

Tick a box.

Alina [✓] Sue [ ]

Give a reason for your answer. ✓(1)

[1 mark]

Range is lower compared to Sue.

13 Four numbers have a mean of 10

Three of the numbers are 5 8 9

Work out the other number.

[3 marks]

let the 4th numbers be x.

$10 = \frac{5+8+9+x}{4}$ ✓①

$40 = 22 + x$ ①

$x = 18$

Answer 18 ✓①