

Statistics – 2021/20 GCSE Mathematics Foundation**1. Nov/2021/Paper_J560/01/No.4**

Here is a list of numbers.

6 9 2 3 9 1

(a) Work out the range of the numbers.

(a) [2]

(b) Work out the mean of the numbers.

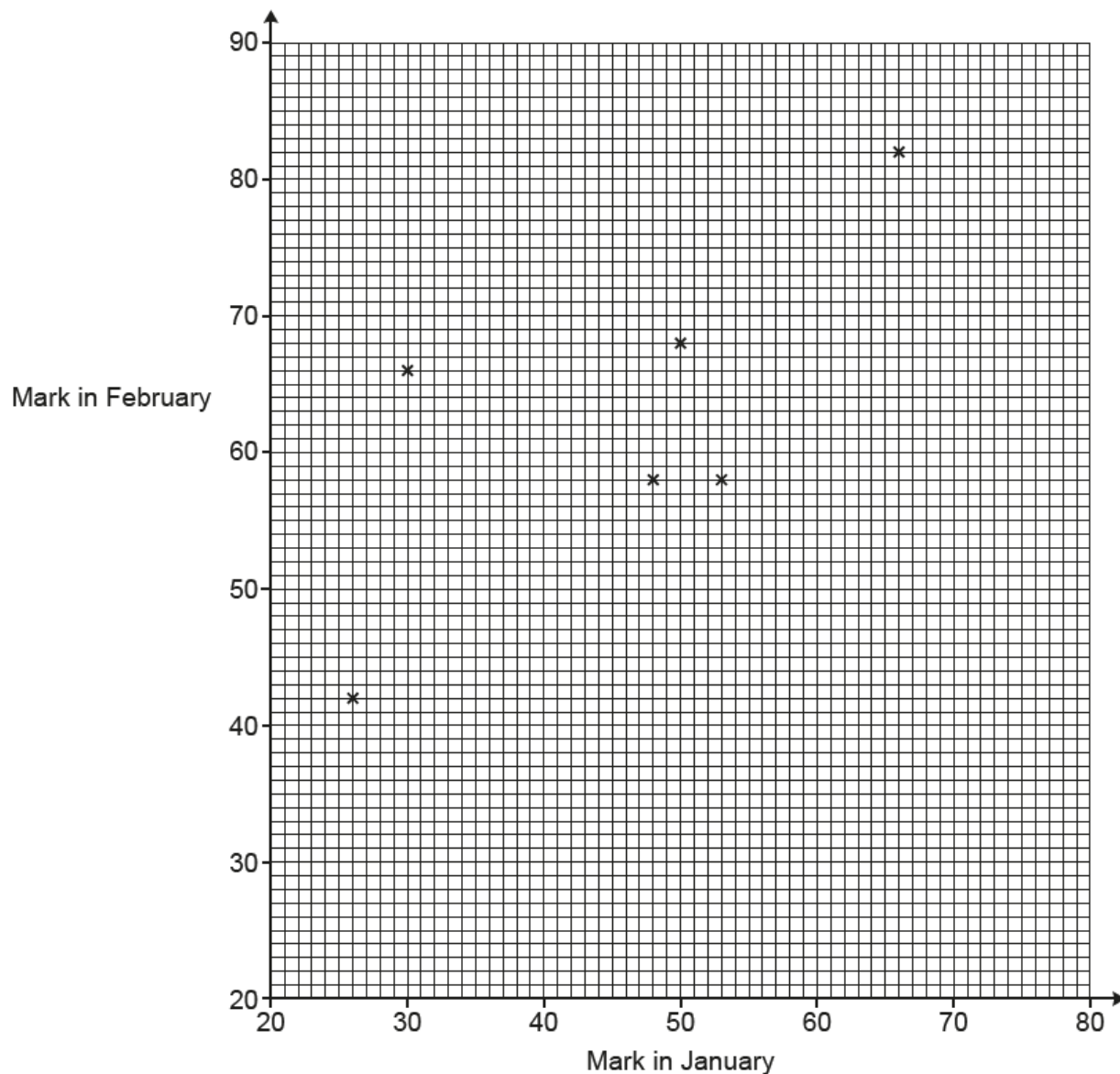
(b) [2]

2. Nov/2021/Paper_J560/02/No.18

The table shows the marks obtained by 10 students in spelling tests in January and February.

Mark in January	26	53	50	48	30	66	70	44	37	38
Mark in February	42	58	68	58	66	82	86	60	48	50

The marks for the first six students are plotted on the scatter diagram.



(a) Plot the marks for the remaining four students. [2]

(b) Describe the type of correlation shown in the completed scatter diagram.

..... [1]

3. Nov/2021/Paper_J560/02/No.22

A journalist is going to do a survey to find out whether people aged 15 or less spend more time playing computer games than people aged more than 15.

The journalist says their sample will be the first 20 people leaving a particular shop after 9 am next Monday.

(a) Give **one** reason why the journalist's sample is unlikely to give reliable information.

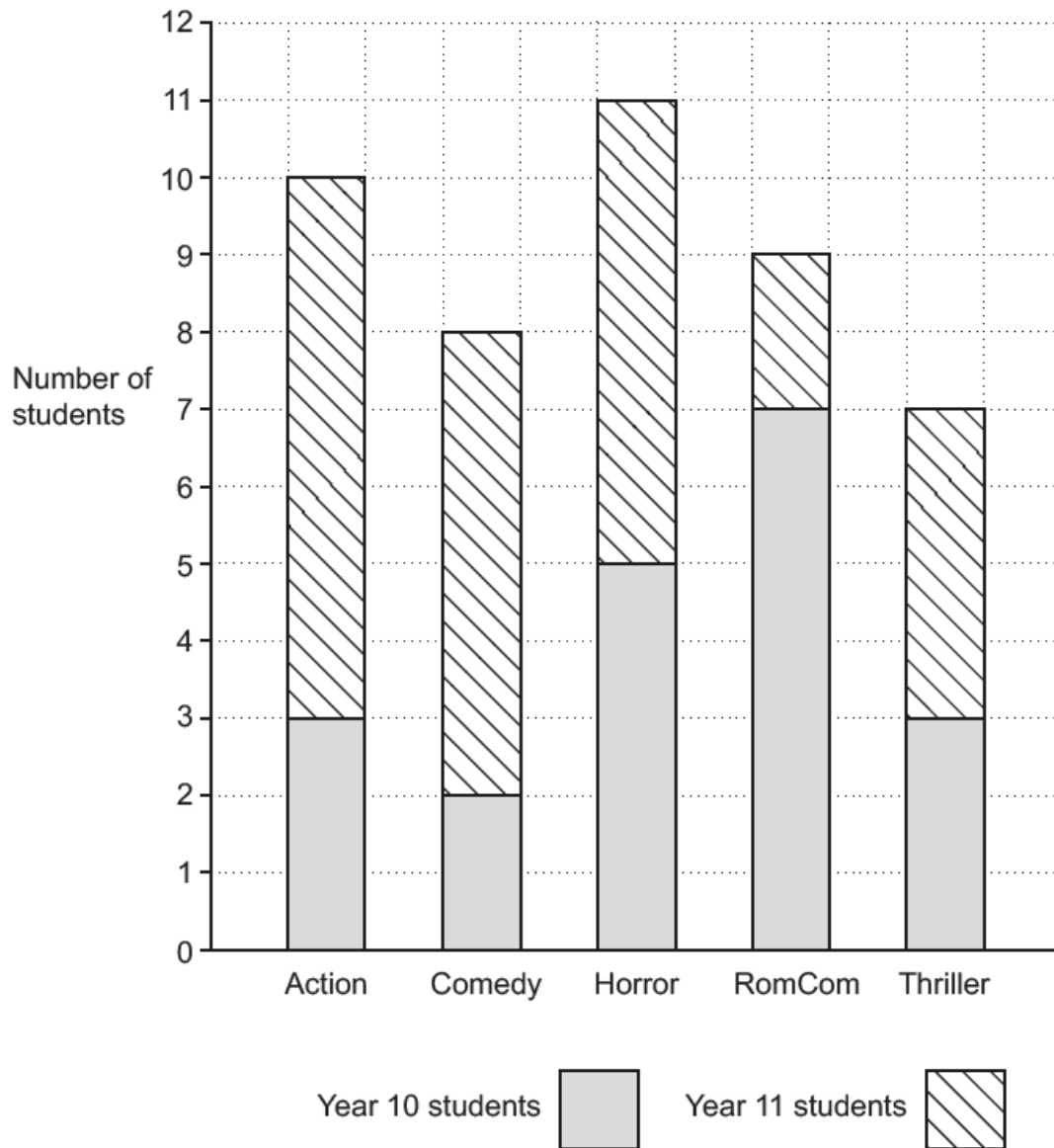
.....
..... **[1]**

(b) Make **three** suggestions to help the journalist obtain a sample that may give more reliable information.

1
.....
2
.....
3
.....
[3]

4. Nov/2021/Paper_J560/03/No.1

In a survey, some students chose their favourite type of film from a list of five.
The bar chart shows the results.



(a) (i) How many students chose Action films?

(a)(i) [1]

(ii) How many Year 11 students chose Action films?

(ii) [1]

(b) What type of film was chosen by the most Year 10 students?

(b) [1]

(c) How many Year 10 students took part in the survey?

(c) [2]

(d) 45 students took part in the survey.

Write the ratio

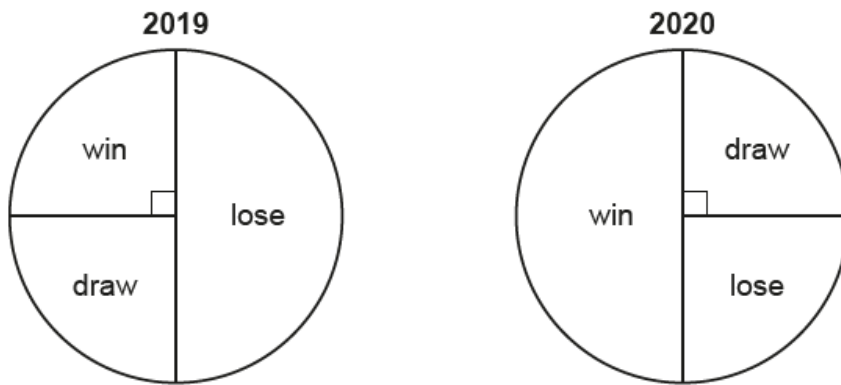
number of Year 10 students taking part : number of Year 11 students taking part

in its simplest form.

(d) : [3]

5. Nov/2021/Paper_J560/03/No.4

A sports team played the same number of matches in 2019 and 2020.
The two pie charts summarise their results.



(a) What fraction of the matches did the team win in 2019?

(a) [1]

(b) Did the team's results improve in 2020?
Explain how you know.

..... because
..... [1]

6. Nov/2021/Paper_J560/03/No.17

Ling throws a six-sided dice 300 times.

The table shows the frequencies of their results.

(a) Complete the table to show the relative frequencies.

Number on dice	1	2	3	4	5	6
Frequency	42	27	57	60	39	75
Relative frequency			0.19			

[2]

(b) Ling thinks that the dice may be biased.

(i) Explain why evidence from the table could support their opinion.

.....

 [1]

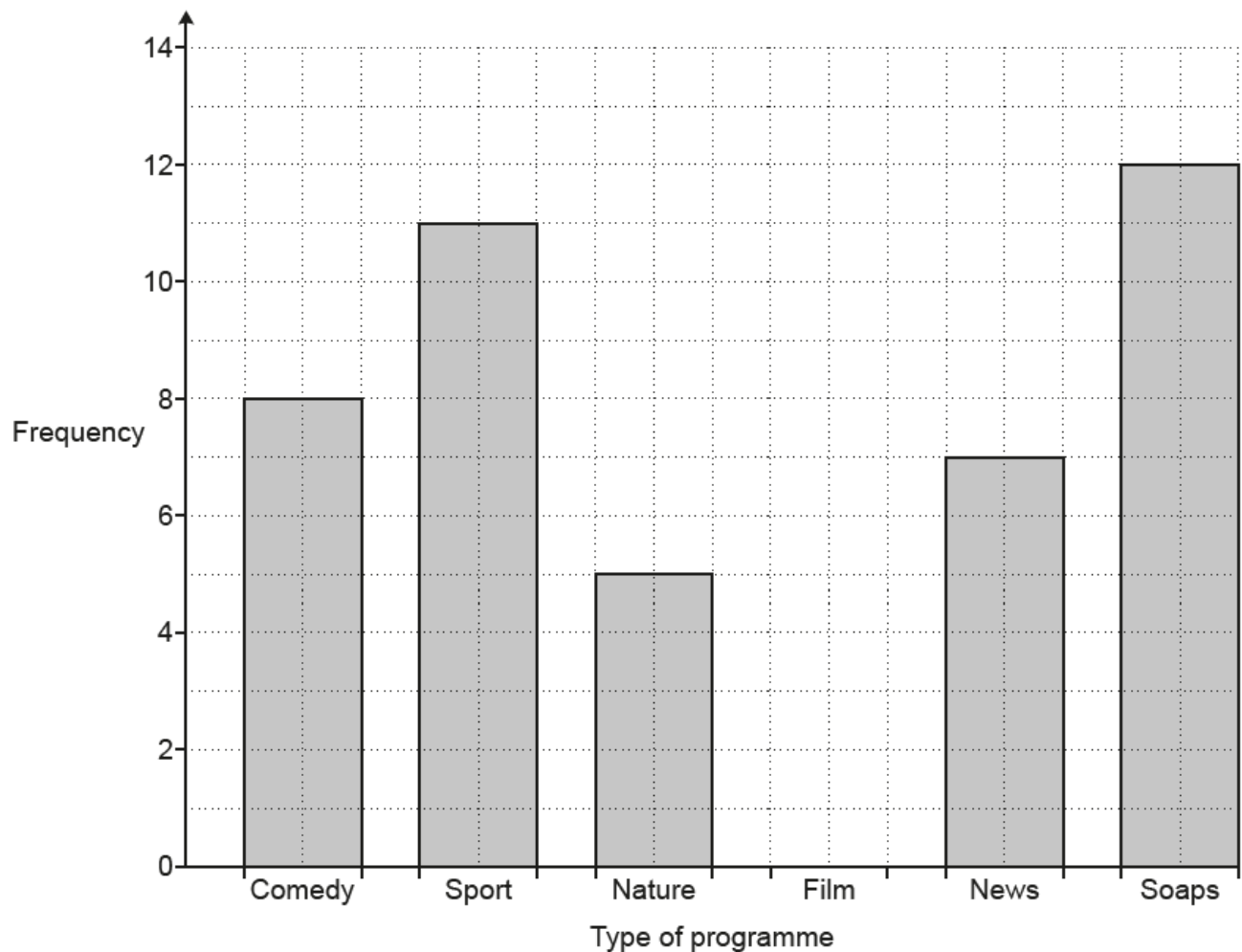
(ii) Explain why the dice may, in fact, **not** be biased.

.....

 [1]

7. Nov/2020/Paper_J560/01/No.1

Reece asked some friends what type of programme they watch most on television.
The bar chart shows some of his results.



(a) 10 people answered Film.

Complete the bar chart to show this information.

[1]

(b) Complete these sentences.

(i) was chosen by the most people.

[1]

(ii) people chose News.

[1]

(iii) **fewer** people chose Nature than Comedy.

[1]

8. Nov/2020/Paper_J560/01/No.19

One morning Kai records the colour of the cars passing his house.
He then works out the relative frequency of each colour.
Some of his results are shown in this table.

Colour	Silver	Red	Green	Black	Other
Relative frequency		0.16	0.10	0.24	0.32

The following morning, Kai is going to record the colour of the first 200 cars to pass his house.

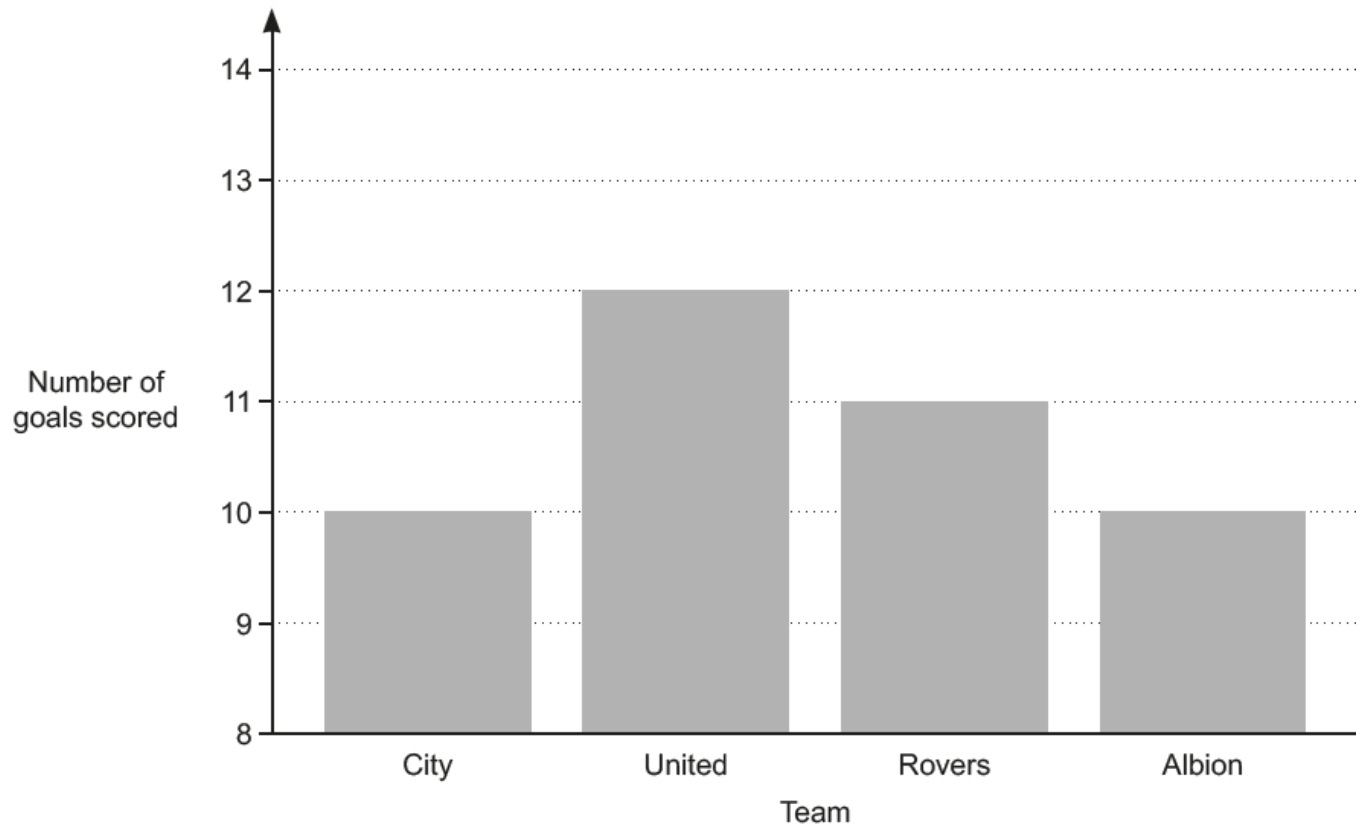
Work out an estimate for the total number of cars, coloured silver or red, that he should expect to see.

..... [4]

9. Nov/2020/Paper_J560/02/No.7

This is Nadia's bar chart to show the number of goals scored by four teams during November.

Number of goals scored in November



(a) Blake says

Nadia's bar chart shows that United scored twice as many goals as City.

Is Blake correct?

Give a reason for your answer.

..... because [1]

(b) Give one way in which Nadia can improve her bar chart.

..... [1]

(c) Kareem says

Out of these four teams, United achieved the highest mean number of goals per game during November.

What assumption has Kareem made?

..... [1]

10. Nov/2020/Paper_J560/03/No.4

A teacher asks nine of his pupils how many pets they have at home.

Here are the results.

1 1 1 2 3 4 5 7 111

(a) Work out the range of the nine results.

(a) [1]

(b) The median of the nine results is 3.
The mean is 15.

(i) Write down the mode.

(b)(i) [1]

(ii) The teacher wants to use a sensible average to summarise the results.

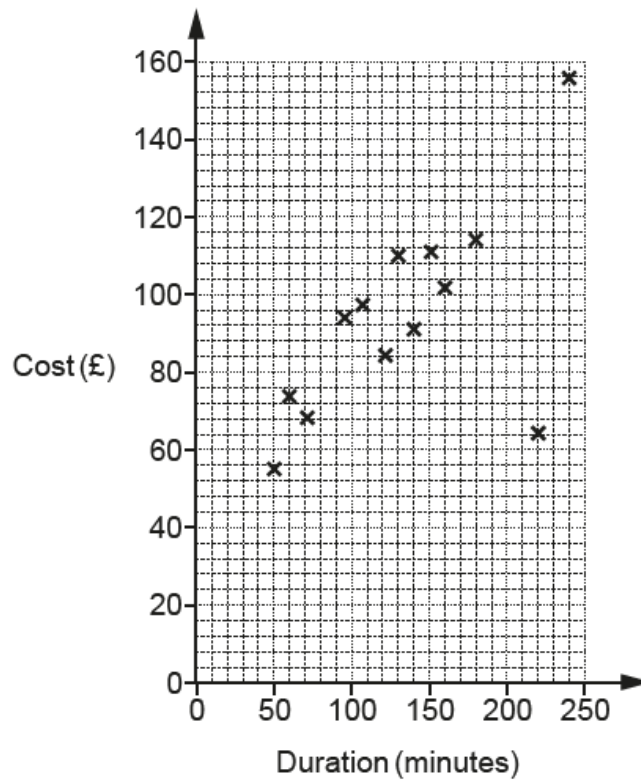
Which average should he use and why?

..... because

..... [1]

11. Nov/2020/Paper_J560/03/No.14

A travel agent records the duration and cost of the 15 flights he sold on one day.
The data for the first 13 flights are plotted on the scatter diagram.



(a) The data for the final two flights is:

Duration	210 minutes	1 hour 40 minutes
Cost	£130	£80

Plot these flights on the scatter diagram.

[2]

(b) The cost of one of the 15 flights had been discounted in a sale.

Circle the most likely flight on the scatter diagram.

[1]

(c) (i) Draw a line of best fit on the scatter diagram. [1]

(ii) Use your line of best fit to estimate the duration of a flight costing £90.

(c)(ii) minutes [1]

(d) Explain why the travel agent should not use his records to estimate the cost of a 7 hour flight.

.....

.....

..... [1]