Name: SOLUTIONS

GCSE (1 - 9)

Averages

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Solutions by
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These questions are compiled from *released* Pearson Edexcel GCSE maths exam papers
They contain exam questions from up until the ***Summer 2023*** exam series
More recent exam papers do exist but are withheld for mock exams
As new exam papers are released these worksheets will gradually be updated
The ***most current*** version of these worksheets will always be available at: kennethstafford.co.uk

Question	Where the question appeared
1	Edexcel, GCSE, Autumn 2020, Paper 1F, Q16
2	Edexcel, GCSE, Autumn 2020, Paper 1F, Q26
3	Edexcel, GCSE, Autumn 2019, Paper 2F, Q9
4	Edexcel, GCSE, Autumn 2019, Paper 3F, Q9
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9	Edexcel, GCSE, Summer 2023, Paper 1F, Q12
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1

The table gives information about the number of points scored by each of 16 students in a game.

Number of points	Frequency
0	1
1	3
2	5
3	4
4	3

Tina worked out the median of the number of points scored to be 5

(a) Explain why it is **not** possible for the median to be 5

The most points scored in any game was 4.

The median cannot be higher than 4.

The median is 2.

(1)

Tina also worked out the total number of points scored by the 16 students in the game.
Here is her working.

$$(0 \times 1) + (1 \times 3) + (2 \times 5) + (3 \times 4) + (4 \times 3) = 1 + 3 + 10 + 12 + 12 = 38$$

Tina made a mistake in her working to find the total number of points scored.

(b) Describe the mistake that Tina made.

0 x 1 = 0

Not 1.

(1)

(Total for Question 16 is 2 marks)

[Edexcel, GCSE, Autumn 2020, Paper 1F, Q16]

2

The table shows information about the heights, in cm, of a group of Year 9 girls.

least height	150 cm
median	165 cm
greatest height	170 cm

Range = 170 - 150 = 20

This stem and leaf diagram shows information about the heights, in cm, of a group of 15 Year 9 boys.

15	8 9 9
16	4 5 7 7 8
17	0 3 4 4 7
18	0 2

Key: 15 | 8 represents 158 cm

Range = 182 - 158 = 24

Median = 168

Compare the distribution of the heights of the girls with the distribution of the heights of the boys.

The boys median height is 168 cm which is higher than the girls median of 165cm.

The boys range of heights is 24cm which is higher than the girls range of 20cm.

(Total for Question 26 is 3 marks)

[Edexcel, GCSE, Autumn 2020, Paper 1F, Q26]

3

Here is a list of numbers.

3 4 4 6 8 9

6 4 8 9 4 3

(a) Work out the median.

5

(2)

Aisha picks at random one of the numbers.

(b) What is the probability that she picks an odd number?

odd (2): 3 and 9
even (4): 4, 4, 6 and 8
Total = 6

$\frac{2}{6} = \frac{1}{3}$

(2)

Clara has five cards.
There is a number on each card.
Two of the numbers are hidden.

3	?	8	5	?

The mode of the five numbers is 3
The mean of the five numbers is 5

(c) Work out the two numbers that are hidden.

3 3 8 5 ?

3+3+8+5 = 19

6

Total = 5 × 5 = 25

19 + 6 = 25

3 , 6

(2)

(Total for Question 9 is 6 marks)

[Edexcel, GCSE, Autumn 2019, Paper 2F, Q9]

4

Mrs Brown asked each child in her class which pet they liked best.

Here are her results.

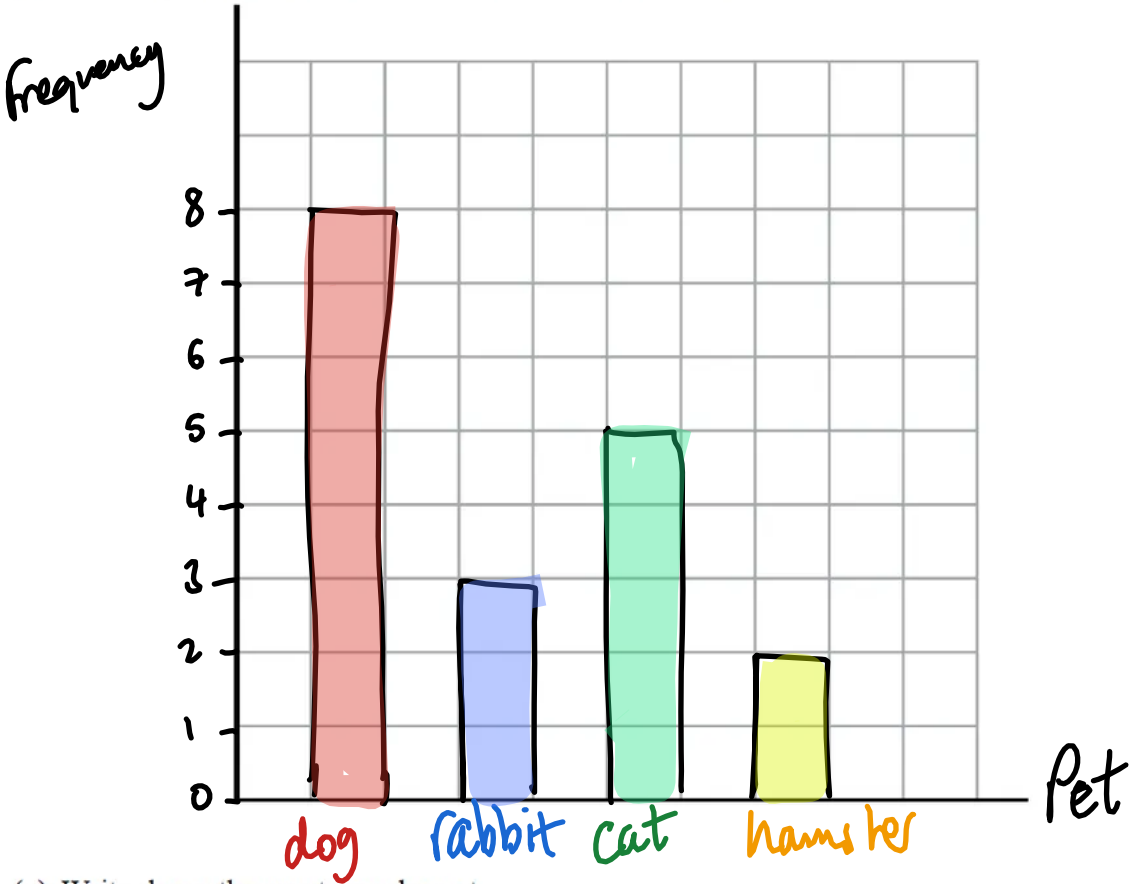
dog	rabbit	cat	dog	dog	hamster
cat	dog	rabbit	hamster	cat	cat
dog	dog	cat	dog	rabbit	dog

(a) Complete the frequency table for this information.

Pet	Tally	Frequency
dog	𝍸 III	8
rabbit	III	3
cat	𝍸	5
hamster	II	2

(2)

(b) On the grid below, draw a bar chart for this information.



(3)

(c) Write down the most popular pet.

dog (mode)

(1)

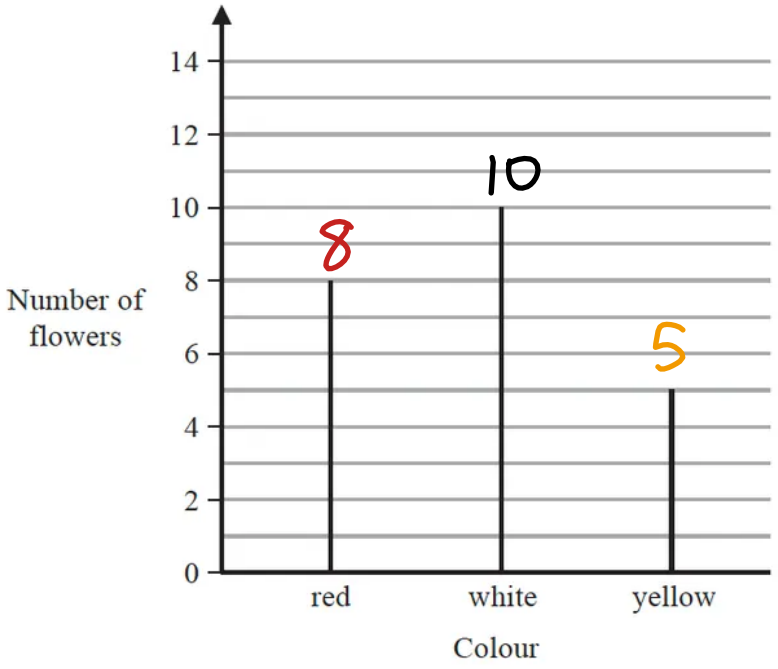
(Total for Question 9 is 6 marks)

[Edexcel, GCSE, Autumn 2019, Paper 3F, Q9]

5

In Adam's garden, the flowers are only red or white or yellow or blue.

The chart shows the number of red flowers, the number of white flowers and the number of yellow flowers.



The total number of flowers is 30

(a) Work out the number of blue flowers.

$8 + 10 + 5 = 23$

$30 - 23 = 7$

7

(2)

(b) Write down the mode.

White

(1)

(Total for Question 7 is 3 marks)

[Edexcel, GCSE, Summer 2019, Paper 1F, Q7]

6 Jake and Sarah each played a computer game six times.

Their scores for each game are shown below.

Jake	10	9	8	11	12	8
Sarah	2	10	7	14	4	10

Range = 12 − 8 = 4

Range = 14 − 4 = 10

(a) Who had the most consistent scores, Jake or Sarah?
You must give a reason for your answer.

Jake. His range was 4 which is less than Sarah's range of 10.

(1)

Jake played a different game 20 times.

The stem and leaf diagram shows information about his scores.

0	9
1	2 3 3 4 5
2	5 6 6 6 6 7
3	1 3 4 6 8
4	0 2 9

Key
1 | 2 represents 12 points

Jake said his modal score was 6 points because 6 occurs most often in the diagram.

(b) Is Jake correct?
You must explain your answer.

No. These 6s represent the number 26.

26 is the mode.

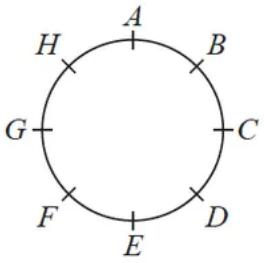
(1)

(Total for Question 10 is 2 marks)

[Edexcel, GCSE, Autumn 2017, Paper 1F, Q10]

7

Hasmeet walks once round a circle with diameter 80 metres.



There are 8 points equally spaced on the circumference of the circle.

(a) Find the distance Hasmeet walks between one point and the next point.

Circumference = $80 \times \pi = 80\pi$

$= 251.3$ m

$251.3 \div 8 = 31.4$ m

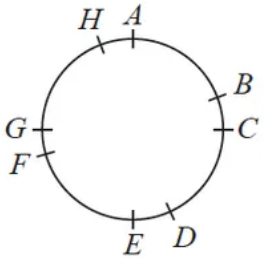
or

$80\pi \div 8 = 10\pi$

..... m

(2)

Four of the points are moved, as shown in the diagram below.



Hasmeet walks once round the circle again.

(b) Has the mean distance that Hasmeet walks between one point and the next point changed? You must give a reason for your answer.

No. The circumference and overall distance is unchanged as are the number of points.

(1)

(Total for Question 18 is 3 marks)

[Edexcel, GCSE, Autumn 2017, Paper 2F, Q18]

8

Here is a list of numbers.

12 15 14 17 22 19 13

Bridgit says,

"To work out the median you find the middle number,
so the median of these numbers is 17"

Bridgit's answer is **not** correct.

(a) What is wrong with Bridgit's method?

The numbers must be ordered by size first.

(1)

(b) Work out the range of the numbers in the list.

$22 - 12 = 10$

(2)

(c) Work out the mean of the numbers in the list.

$$\frac{12+15+14+17+22+19+13}{7} = \frac{112}{7} = 16$$

(2)

(Total for Question 6 is 5 marks)

[Edexcel, GCSE, Summer 2017, Paper 3F, Q6]

9

Here are 6 numbers.

13 5 4 9 3 8

Work out the mean.

$\frac{13+5+4+9+3+8}{6} = \frac{42}{6} = 7$

.....

(Total for Question 12 is 2 marks)

[Edexcel, GCSE, Summer 2023, Paper 1F, Q12]

10

Four students play a game.
The table shows the number of points each student has.

Student	Ali	Barbara	Calliope	Danesh
Number of points	143	121	45	19

Barbara has more points than Danesh.

(a) How many more?

$121 - 19 = 101$

.....

(1)

(b) Work out the mean number of points.

$\frac{143+121+45+19}{4} = \frac{328}{4} = 82$

.....

(2)

(Total for Question 8 is 3 marks)

[Edexcel, GCSE, November 2022, Paper 2F, Q8]

11

Here is a list of numbers.

3 3 3 3 4 4 5 7 8

Write down the mode of the numbers.

3

(Total for Question 3 is 1 mark)

[Edexcel, GCSE, Summer 2022, Paper 2F, Q3]

12

This sign was in a doctor's waiting room.

> 115 appointments were missed last month.
>
> These missed appointments were a total of 25.3 hours.

Work out the mean length of time for each missed appointment.
Give your answer in minutes.

25 hours = 25 x 60 = 1500 mins

0.3 hours = 0.3 x 60 = 18 mins

1518

1518 ÷ 115 = 13.2

13.2 minutes

(Total for Question 18 is 3 marks)

[Edexcel, GCSE, Summer 2022, Paper 2F, Q18]

13

Here is the shoe size of each of 12 boys in a class.

4 5 6 6 6 7 7 8 8 8 8 9

(a) Find the median.

7

(1)

(b) Work out the range.

9 - 4 = 5

(1)

For the shoe sizes of each of 12 girls in the class,

the median size is 6
the range is 3

(c) Compare the distribution of the shoe sizes of the boys with the distribution of the shoe sizes of the girls.

The median size show of the boys is 7 which is higher than the median shoe size of the girls, which is 6.

The range of shoe size for the boys is 7 which is higher than the girls range of 3.

(2)

(Total for Question 14 is 4 marks)

[Edexcel, GCSE, Summer 2022, Paper 3F, Q14]