IGCSE · Cambridge (CIE) · Maths

45 mins 19 questions

Non-Calculator Questions

Averages & Range

Discrete & Continuous Data / Mean, Median & Mode / Calculations with the Mean / Averages from Tables / Averages from Grouped Data / Range & Interquartile Range / Comparing Data Sets

Easy (9 questions)	/12
Medium (4 questions)	/14
Hard (6 questions)	/19
Total Marks	**/45**

Scan here to return to the course
or visit savemyexams.com

Easy Questions

1 (a) The mass, correct to the nearest kilogram, of each of 11 parcels is shown below.

24, 23, 23, 26, 25, 27, 18, 96, 16, 17, 32

Find the mode.

..... kg

(1 mark)

(b) Give a reason why the mean would be an unsuitable average to use.

(1 mark)

2 The time, t minutes, it takes each of 50 students to travel to school is recorded.
The table shows the results.

Time (t minutes)	$0 < t \leq 10$	$10 < t \leq 15$	$15 < t \leq 20$	$20 < t \leq 40$
Frequency	7	19	16	8

Write down the modal class.

..... $< t \leq$ ..... min

(1 mark)

3 The table shows the different methods of travel for 20 people going to work.

Method of travel	Frequency
Car	10
Walk	5
Bike	3
Bus	2

Which type of average, mean, median or mode, can be used for this information?

(1 mark)

4 Twenty students took a Science test and a Maths test.

Both tests were marked out of 50

The table gives information about their results.

	Median	Interquartile range
Science	27	18
Maths	24.5	11

Use this information to compare the Science test results with the Maths test results.
Write down **two** comparisons.

(2 marks)

5 The table shows information about the weights, in kg, of 40 parcels.

Weight of parcel (p kg)	Frequency
$0 < p \leqslant 1$	19
$1 < p \leqslant 2$	12
$2 < p \leqslant 3$	5
$3 < p \leqslant 4$	2
$4 < p \leqslant 5$	2

Write down the modal class.

(1 mark)

6 The table gives information about the speeds, in kilometres per hour, of 80 motorbikes as each pass under a bridge.

Speed (s kilometres per hour)	Frequency
$40 < s \leqslant 50$	10
$50 < s \leqslant 60$	16
$60 < s \leqslant 70$	19
$70 < s \leqslant 80$	23
$80 < s \leqslant 90$	12

Write down the modal class.

(1 mark)

7 The heights, h metres, of the 120 boys in an athletics club are recorded.
The table shows information about the heights of the boys.

Height (h metres)	$1.3 < h \leq 1.4$	$1.4 < h \leq 1.5$	$1.5 < h \leq 1.6$	$1.6 < h \leq 1.7$	$1.7 < h \leq 1.8$	$1.8 < h \leq 1.9$
Frequency	7	18	30	24	27	14

Write down the modal class.

..... $< h \leq$ .....

(1 mark)

8 The table gives information about the length of time, in minutes, that each of 60 students took to travel to school on Monday.

Length of time (t minutes)	**Frequency**
$0 < t \leqslant 10$	4
$10 < t \leqslant 20$	10
$20 < t \leqslant 30$	15
$30 < t \leqslant 40$	25
$40 < t \leqslant 50$	6

Write down the modal class interval.

(1 mark)

9 $10 \quad 15 \quad 12 \quad 20 \quad 13$

Calculate the mean of the numbers.

(2 marks)

Medium Questions

1 Ed has 4 cards.
There is a number on each card.

The first three cards are numbered 12, 6, and 15.

The mean of the 4 numbers on Ed's cards is 10.

Work out the number on the 4th card.

(3 marks)

2 Jenny has six cards.

Each card has a whole number written on it so that

the smallest number is 5
the largest number is 24
the median of the six numbers is 14
the mode of the six numbers is 8

Jenny arranges her cards so that the numbers are in order of size.

For the remaining four cards, write on each dotted line a number that could be on the card.

(3 marks)

3 Yusuf sat 8 examinations. Here are his marks for 5 of the examinations.

68	72	75	77	80

For his results in all 8 examinations

the mode of his marks is 80
the median of his marks is 74
the range of his marks is 16

Find Yusuf's marks for each of the other 3 examinations.

(4 marks)

4 Given that $a < b < c$ the four whole numbers a, a, b and c have

a mode of 7 a median of 8.5 a mean of 9

Work out the value of a, the value of b and the value of c.

$a =$ .....
$b =$ .....
$c =$ .....

(4 marks)

Hard Questions

1 The range, mode, median and mean of five positive integers are all equal to 10.
Find one possible set of these five integers.

(4 marks)

2 $5n$ is the mean of the three numbers 391, n and $n-1$.

Find the value of n.

n = ...

(3 marks)

3 Hertford Juniors is a basketball team.

At the end of 10 games, their mean score is 35 points per game. At the end of 11 games, their mean score has gone down to 33 points per game.

How many points did the team score in the 11 th game?

(3 marks)

4 There are 18 packets of sweets and 12 boxes of sweets in a carton.

The mean number of sweets in all the 30 packets and boxes is 14.

The mean number of sweets in the 18 packets is 10.

Work out the mean number of sweets in the boxes.

(3 marks)

5 There are 15 children at a birthday party.

The mean age of the 15 children is 7 years.

9 of the 15 children are boys. The mean age of the boys is 5 years.

Work out the mean age of the girls.

(3 marks)

6 Petra records the score in each test she takes.
The mean of the first n scores is x.
The mean of the first $(n-1)$ scores is $(x+1)$.

Find the nth score in terms of n and x.
Give your answer in its simplest form.

(3 marks)