AVERAGES AND THE RANGE

GCSE

(+ IGCSE) EXAM QUESTION PRACTICE

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1.   **[2 marks]**

Here is a list of numbers

    12   19   12   15   11   15   12   13   17

Find the median.

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2.   **[5 marks]**

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?

....

....

(1)

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

....

(2)

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

....

(2)

---

3. **[3 marks]**

Here are Ryan's scores in nine French tests.

       4   6   4   7   8 a 6   7   7

The mean of Ryan's nine scores is 6

Work out the value of a.

$a =$ ....

4. **[2 marks]**

The manager of a clothes shop recorded the size of each dress sold one morning.

10   10
12   12
14   14   14   14   14   14
16   16   16   16
18   18   18
20   20   20

The sizes of dresses are always even numbers.
The mean size of the dresses sold that morning is 15.3

The manager says,
              "The mean size of the dresses is **not** a very useful average."

(i) Explain why the manager is right.

....

....

(ii) Which is the more useful average for the manager to know, the median or the mode?
     You must give a reason for your answer.

....

....

....

5. [3 marks]

Six numbers have a mean of 5

Five of the numbers are

3   2   7   6   2

The other number is *x*.

Work out the value of *x*.

$x =$ ....

6. [3 marks]

Here are 8 cards.

There is a number on each of six cards.
Two cards are blank.

(3) (1) (5) (5) (2) (3) (   ) (   )

Uzma wants the mean of the numbers on the 8 cards to be 4
She wants the range of the numbers on the 8 cards to be 9

Find the numbers that she should write on the two blank cards.

.... and ....

7. [3 marks]

Here is a list of numbers written in order of size.

$$3 \quad 6 \quad x \quad y$$

The numbers

       have a median of 8

       have a mean of 11

Find the value of x and the value of y.

$x =$ ....

$y =$ ....

8. [3 marks]

Three positive whole numbers have a median of 7 and a mean of 5

Find the range of these three numbers.

....

9. [6 marks]

(a) Four numbers have a mean of 6
   Three of the numbers are 3, 7 and 10
   Find the other number.

....
(2)

(b) Three numbers have a mode of 5 and a mean of 6
   Find the three numbers.

....
(2)

(c) Find four numbers which have a mode of 7 and a median of 6

....
(2)

10. [4 marks]

The mean height of a group of 4 girls is 158 cm.

(a) Work out the total height of the 4 girls.

.... cm
(1)

Sarah joins the group and the mean height of the 5 girls is 156 cm.

(b) Work out Sarah's height.

.... cm
(3)

11. [4 marks]

w, *x*, *y* and *z* are 4 integers written in order of size, starting with the smallest.

The mean of *w*, *x*, *y* and *z* is 13
The sum of *w*, *x* and *y* is 33

(a) Find the value of *z*.

z = ...
(2)

Given also that the range of *w*, *x*, *y* and *z* is 10,

(b) work out the median of *w*, *x*, *y* and *z*.

....
(2)

12.   **[2 marks]**

Three positive whole numbers have a mean of 4 and a range of 7

Find the three positive whole numbers.

....

13.   **[3 marks]**

The mean height of a group of 6 children is 165 cm.
One child, whose height is 155 cm, leaves the group.

Find the mean height of the remaining 5 children.

.... cm

14. [3 marks]

There are 10 boys and 20 girls in a class.
The class has a test.

The mean mark for all the class is 60
The mean mark for the girls is 54

Work out the mean mark for the boys.

15. [4 marks]

A group of students take a test.
The group consists of 12 boys and 8 girls.
The mean mark for the boys is 18
The mean mark for the girls is 16.5

Calculate the mean mark for the whole group.

....

16. **[2 marks]**

Three positive whole numbers are all different.
The numbers have a median of 8 and a mean of 6
Find the three numbers.

....

17. **[3 marks]**

There are 30 apples in a box.
The mean weight of these 30 apples is 120 grams.

There are 10 apples in a bag.
The mean weight of these 10 apples is 95 grams.

Work out the mean weight of the 40 apples.

....grams

Walkden Reds is a basketball team.

At the end of 11 games, their mean score was 33 points per game.
At the end of 10 games, their mean score was 2 points higher.

Jordan says,

"Walkden Reds must have scored 13 points in their 11th game."

Is Jordan right?
You must show how you get your answer.

....

Zara must take 5 tests.
Each test is out of 100
After 4 tests, her mean score is 64%.

What score must Zara get in her 5th test to increase her mean score in all 5 tests to 70%?

....

20. **[4 marks]**

(a) Three positive whole numbers are all different.
They have a median of 5 and a mean of 4
Find the three numbers.

....
(2)

(b) Find four whole numbers which have a mode of 5 and a median of 6

....
(2)

21. **[3 marks]**

The mean of four numbers is 2.6
One of the four numbers is 5

Find the mean of the other three numbers.

....

22.   **[2 marks]**

Three numbers a, b and c have a median of 4 and a range of 7

(a) Find the median of the three numbers $a + 2$, $b + 2$ and $c + 2$

....
(1)

(b) Find the range of the three numbers $a + 2$, $b + 2$ and $c + 2$

....
(1)

23.   **[4 marks]**

a, b, c and d are four integers.
Their mean is 8
Their mode is 7

Their median is 7.5

(a) Find the value of the largest of the four integers.

....
(2)

(b) Find the mean value of the numbers $(2a - 3)$, $(2b - 3)$, $(2c - 3)$ and $(2d - 3)$.

....
(2)