

Working with Averages

(Mean, Mode, Median & Range)

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1. Mean and median

(a) Look at these three numbers.

9

11

10

Show that the **mean** of the three numbers is **10**



1 mark

Explain why the **median** of the three numbers is **10**



1 mark

(b) Four numbers have a mean of 10 and a median of 10, but **none** of the numbers is 10

What could the four numbers be?

Give an example.



1 mark

2. (a) There are four people in Sita's family.

Their shoe sizes are 4, 5, 7 and 10

What is the **median** shoe size in Sita's family?



1 mark

(b) There are **three** people in John's family.
The **range** of their shoe sizes is **4**

Two people in the family wear shoe size 6
John's shoe size is **not 6** and it is **not 10**

What is John's shoe size?



1 mark

3. Cycling

Hannah went on a cycling holiday.

The table shows how far she cycled each day.

Monday	Tuesday	Wednesday	Thursday
32.3 km	38.7 km	43.5 km	45.1 km

Hannah says:

'On average, I cycled **over 40 km** a day'.

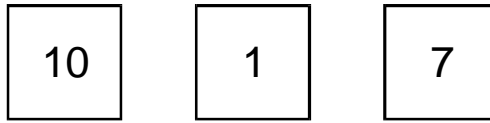
Show that Hannah is wrong.



2 marks

4. **Set of three**

The **mean** of these number is **6**



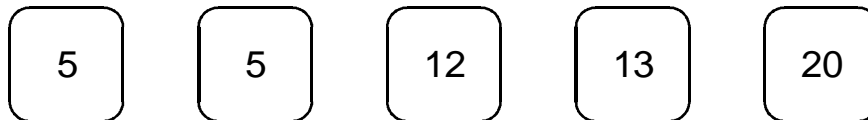
Write three numbers that have a mean of **7**

A small pencil icon is positioned to the left of three empty square boxes arranged horizontally, intended for the student to write three numbers.

1 mark

5. **Set of four**

The **median** of these five numbers is **12**



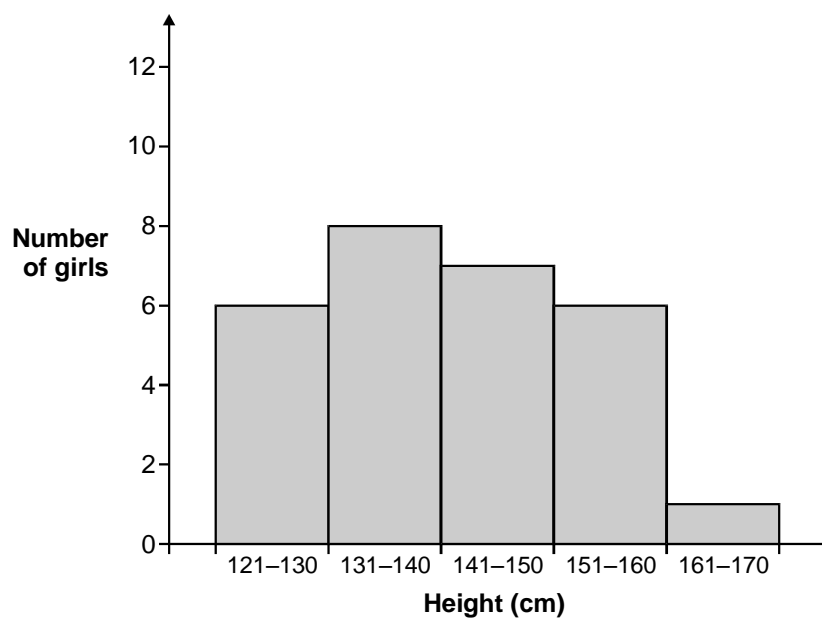
Write a set of **four** numbers that has a median of **12**

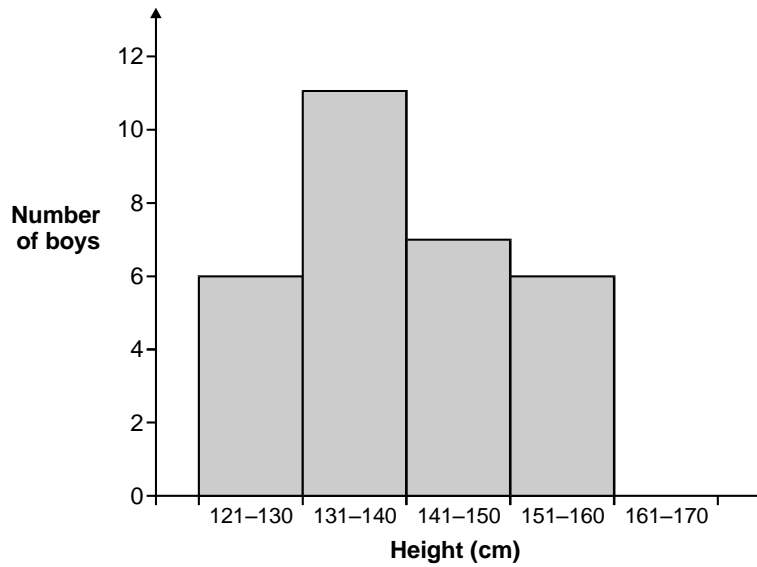
A small pencil icon is positioned to the left of four empty rounded rectangular boxes arranged horizontally, intended for the student to write four numbers.

1 mark

6. **Comparing heights**

The two diagrams show the heights of some girls and boys.





(a) Use the diagrams to decide whether these statements are **true** or **false**.

Tick (✓) your answer.

There are **more girls** than boys.

True

False

Show calculations to explain how you know.



The **modal class** for girls is the same as the modal class for boys.

1 mark

True

False

Explain how you know.



1 mark

(b) The height of the shortest girl is the same as the height of the shortest boy.

Is the **range** of girls' heights greater than the range of boys' heights?

Yes

No


Explain how you know.



1 mark

7. Mean and range

Which two numbers have a **mean** of **10** and a **range** of **8**?

 The numbers are and

2 marks

8. Scores

- (a) Paula played four games in a competition.
In **three** games, Paula scored **8** points each time.
In the other game she scored **no** points.

What was Paula's **mean** score over the **four** games?



..... points

1 mark

- (b) Jessie only played **two** games.
Her **mean** score was **3** points.
Her **range** was **4** points.

What points did Jessie score in her two games?



..... and

1 mark

- (c) Ali played **three** games.
His **mean** score was also **3** points.
His **range** was also **4** points.

What points might Ali have scored in his three games?
Show your working.



..... and and

2 marks