



- 1 Here are four numbers.

6 11 9 14

Work out the mean of these numbers.

(2 marks)

The mean is the amount each value would have if the total were shared equally.
Add all the values, then divide by how many values there are

Total

$$6 + 11 + 9 + 14 = 40$$

Mean

$$40 \text{ divided by } 4 = 10$$

10

- 2 Here are five numbers.

4 9 6 2 9

Work out the mean of the numbers.

(2 marks)

$$4 + 9 + 6 + 2 + 9 = 30$$

$$\text{mean} = 30 \div 5$$

6

- 3 Owen watches five videos. Here are the lengths of the videos, in seconds.

210 185 240 195 230

Work out the mean length of the videos. Give your answer in minutes and seconds.

(3 marks)

Total

$$210 + 185 + 240 + 195 + 230 = 1060 \text{ seconds}$$

Mean

$$1060 \text{ divided by } 5 = 212 \text{ seconds}$$

$$212 \text{ seconds} = 180 \text{ seconds} + 32 \text{ seconds} = 3 \text{ minutes } 32 \text{ seconds}$$

3 minutes 32 seconds

- 4 Here are the midnight temperatures, in °C, on five nights.

-5 2 -3 4 -3

Work out the mean temperature.

(2 marks)

$$-5 + 2 - 3 + 4 - 3 = -5$$

$$\text{mean} = -5 \div 5$$

$$\boxed{-1^{\circ}\text{C}}$$

- 5 There are 10 boys and 15 girls in a class.

The mean score of the 10 boys in a test was 6.2.

The mean score of the 15 girls in the same test was 5.8.

Mr Field says, "The mean score for the whole class was 6."

Show that Mr Field is wrong.

(3 marks)

The groups have different sizes, so their means cannot be given equal weight.
Recover each group's total first, then divide the combined total by the combined number of people

Total for boys

$$10 \times 6.2 = 62$$

Total for girls

$$15 \times 5.8 = 87$$

Whole-class total

$$62 + 87 = 149, \text{ and } 10 + 15 = 25 \text{ students}$$

Mean

149 divided by 25 = 5.96, which is not 6, so Mr Field is wrong

$$\boxed{\text{Whole-class mean} = 5.96, \text{ not } 6}$$

- 6 The mean of 8 numbers is 12.
The mean of 5 of these numbers is 9.
Work out the mean of the other 3 numbers.

(3 marks)

Total of all 8 numbers

$$8 \times 12 = 96$$

Total of the 5 numbers

$$5 \times 9 = 45$$

Total of the other 3 numbers

$$96 - 45 = 51$$

Mean

$$51 \text{ divided by } 3 = 17$$

17

- 7 Here are the temperatures, in $^{\circ}\text{C}$, at noon on six days.

8 12 9 14 10 13

- a. Work out the mean temperature.
b. Work out the range of the temperatures.

(3 marks)

a)

$$8 + 12 + 9 + 14 + 10 + 13 = 66$$

$$\text{mean} = 66 \div 6$$

11 $^{\circ}\text{C}$

b)

$$\text{range} = 14 - 8$$

6 $^{\circ}\text{C}$

- 8 Kofi records how long he spends on homework each evening, in minutes.

35 50 45 60 40 30

Work out the mean time he spends on homework each evening.
Give your answer correct to 1 decimal place.

(3 marks)

$$35 + 50 + 45 + 60 + 40 + 30 = 260$$

$$\text{mean} = 260 \div 6 = 43.333...$$

Round to 1 decimal place

43.3 minutes

- 9 Freya plays six rounds of a quiz. Her mean score for the six rounds is 15.

Here are her scores for the first five rounds.

12 18 9 21 14

Work out her score in the sixth round.

(4 marks)

Total of all six scores

$$6 \times 15 = 90$$

Total of the first five scores

$$12 + 18 + 9 + 21 + 14 = 74$$

Sixth score

$$90 - 74 = 16$$

16

- 10 The mean of 7 numbers is 14.

One of the numbers is removed.

The mean of the remaining 6 numbers is 12.5.

Work out the number that was removed.

(4 marks)

Total of the 7 numbers

$$7 \times 14 = 98$$

Total of the remaining 6 numbers

$$6 \times 12.5 = 75$$

Number removed

$$98 - 75 = 23$$

23

- 11 Sasha saves some money each week for 4 weeks. Her mean saving per week is £15.

In the first 3 weeks she saves £12, £18 and £9.

How much does she save in week 4?

(3 marks)

Total = mean $\times$ number of weeks

$$15 \times 4 = 60$$

$$12 + 18 + 9 = 39$$

$$60 - 39 = 21$$

£21

12

The table shows the points scored by two netball teams in five matches.

Team	Match 1	Match 2	Match 3	Match 4	Match 5
Lions	4	7	5	9	5
Hawks	6	3	8	2	6

- Work out the mean number of points scored by the Lions.
- Work out the mean number of points scored by the Hawks.
- Which team has the higher mean, and by how much?

(4 marks)

a)

$$4 + 7 + 5 + 9 + 5 = 30$$

$$30 \div 5 = 6$$

b)

$$6 + 3 + 8 + 2 + 6 = 25$$

$$25 \div 5 = 5$$

c)

$$6 - 5 = 1$$

Lions, by 1 point

13

A running club has m men and w women.

The mean age of the men is 38.

The mean age of the women is 26.

The mean age of all the members of the club is 30.

Find the ratio $m : w$. Give your answer in its simplest form.

(5 marks)

Total age of the men: $38m$. Total age of the women: $26w$

Mean of everyone

$$(38m + 26w) \text{ divided by } (m + w) = 30$$

$$\text{So } 38m + 26w = 30m + 30w$$

$$8m = 4w, \text{ so } 2m = w$$

Therefore m

$$w = 1 : 2$$

$$1 : 2$$

- 14 Here are five numbers.

3 8 8 x 12

The mean of the five numbers is 8.

Work out the value of x .

(3 marks)

$$\text{total} = 8 \times 5 = 40$$

$$3 + 8 + 8 + 12 = 31$$

$$x = 40 - 31$$

$$x = 9$$

- 15 Five pens cost a mean of £2.40 each. Three other pens cost a mean of £1.60 each.

Work out the mean cost of all eight pens.

(3 marks)

$$5 \times 2.40 = £12.00$$

$$3 \times 1.60 = £4.80$$

$$\text{total} = £16.80$$

$$16.80 \div 8 = 2.10$$

$$£2.10$$