

1

The mean of x , $x + 3$, $2x$ and 9 is 8. Find x .

$$\begin{aligned} \text{Total } 8 \times 4 &= 32 \\ 4x + 12 &= 32 \\ x &= 5 \end{aligned}$$

Answer $x = 5$

2

The mean of $2x$, $x + 4$ and $3x - 1$ is 13. Find x .

$$\begin{aligned} \text{Total } 13 \times 3 &= 39 \\ 6x + 3 &= 39 \\ x &= 6 \end{aligned}$$

Answer $x = 6$

3

The mean of x , $x + 1$, $x + 5$, $2x$ and $3x - 2$ is 12. Find x .

$$\begin{aligned} \text{Total } 12 \times 5 &= 60 \\ 8x + 4 &= 60 \\ x &= 7 \end{aligned}$$

Answer $x = 7$

4

Ali's scores in three quizzes are $3x$, $2x + 5$ and $x + 7$. His mean score is 16. Find x .

$$x = 6$$

Answer $x = 6$

5

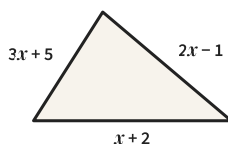
The mean of five numbers is 7. Four of them are 4, 9, 6 and 8. Find the fifth number.

$$\text{total } 35, \text{ and } 4 + 9 + 6 + 8 = 27$$

Answer 8

6

The mean length of the sides of this triangle is 9 cm. Find x .



$$6x + 6 = 27$$

Answer $x = 3.5$

7

A class of 12 pupils has a mean score of 15. A class of 18 pupils has a mean score of 20. Find the mean score of all 30 pupils.

$$180 + 360 = 540, 540 \div 30$$

Answer 18

8

The numbers x , $x + 2$, $x + 6$ and $x + 8$ have a mean of 11. Find the largest number.

$$4x + 16 = 44, x = 7$$

Answer 15

Averages and algebra further practice

9

The mean of 3, x , 7 and $2x$ is 7. Find x .

$$3x + 10 = 28$$

Answer $x = 6$

10

The mean of $x + 1$, $x + 4$ and $x + 10$ is 12. Find the median of the three numbers.

$$3x + 15 = 36, \text{ so } 8, 11 \text{ and } 17$$

Answer 11

11

The mean mass of 6 parcels is 4 kg. One more parcel is added and the mean mass becomes 4.5 kg. Find the mass of the new parcel.

$$7 \times 4.5 = 31.5, 31.5 - 24$$

Answer 7.5 kg

12

The mean of $2x + 1$, $3x - 4$ and $x + 9$ is $x + 5$. Find x .

$$6x + 6 = 3x + 15$$

Answer $x = 3$

13

8 boys have a mean height of 150 cm. The mean height of all 20 pupils in the group is 156 cm. Find the mean height of the 12 girls.

$$3120 - 1200 = 1920, 1920 \div 12$$

Answer 160 cm

14

The table shows the scores on a spinner. The mean score is 2.4. Find x .

Score	1	2	3	4
Frequency	4	x	6	2

$$30 + 2x = 2.4(12 + x)$$

Answer $x = 3$

15

Four consecutive whole numbers have a mean of 12.5. Find the four numbers.

$$n + (n + 1) + (n + 2) + (n + 3) = 50$$

Answer 11, 12, 13, 14

16

The mean of x , $2x$ and $3x$ is 8. Jo says $x = 8$. Explain her mistake and find x .

$$\text{the mean is } 6x \div 3 = 2x, \text{ so } 2x = 8$$

Answer $x = 4$