Calculating the mean

The 'mean' is also called the 'average'. By calculating the mean, we can summarise a set of numbers (called 'data') – this will help us to understand **the overall value** of a given set of values. Sometimes these values come from **repeating** an experiment – when we repeat an experiment and then calculate the **mean** of the results, the **reliability** of the results are improved as gives us more **representative** results.

Things to remember:

- *2 steps – add up numbers in your dataset (group of numbers) then divide by the number of numbers in your data set.*
- *Your mean value should be between the biggest and smallest numbers you have*
- *Always give units if you can*
- *There are 2 marks available when calculating a mean – one for your working and one for the answer (with the correct unit, if a unit is used).*

Worked example:

> **Question**: Ryan plays basketball on a team. He has played three games so far. In the first game, he scored 10 points. In the second game, he scored 14 points. In the third game, he scored 6 points. What is Ryan's mean/average points per game?
>
> **Answer:**
> Step 1:   10 + 14 + 6 = 30   (1)
> Step 2:   30 divided by 3 = <u>10</u> points   (1)

Try these then do the questions on the following pages:

EXERCISE 1

1. Mandy earns money by delivering groceries. She earned £4 on Monday, £7 on Tuesday, £5 on Wednesday, £4 on Thursday, and £5 on Friday. What is the average amount of money Mandy earned per day?

2. Harley read 5 books in January, 8 books in February, 4 books in March, and 7 books in April. What is the average number of books Harley read per month?

3. The 7 employees at a company are paid the following wages per month:

    £100, £130, £100, £90, £480, £120, £100

    a) What is the average wage at the company?
    b) How much above the average is the highest earner paid?

c) How much below the average is the lowest earner paid?

EXERCISE 2

1)   9, 3, 6

Mean = _____6_____

2)   14, 12, 17, 9

Mean = _____13_____

3)   15, 8, 10, 5, 7

Mean = _____9_____

4)   18, 19, 11

Mean = _____16_____

5)   4, 20, 16, 4

Mean = _____11_____

6)   12, 11, 12, 20, 15

Mean = _____14_____

7)   19, 8, 3

Mean = _____10_____

8)   7, 13, 6, 2

Mean = _____7_____

9)　12, 15, 17, 2, 14   10)　10, 18, 8

Mean = ___12___   Mean = ___12___

11)　5, 2, 0, 1   12)　3, 9, 5, 16, 7

Mean = ___2___   Mean = ___8___

EXERCISE 3

1)　13, 11, 8, 15, 5, 2   2)　80, 82, 65, 78, 69, 72, 79

Mean = ___9___   Mean = ___75___

3)　75, 14, 48, 81, 39, 67, 33, 19   4)　54, 46, 27, 66, 35, 84

Mean = ___47___   Mean = ___52___

5)　37, 40, 26, 53, 6, 71, 68   6)　63, 58, 69, 55, 49, 64, 70, 52

Mean = ___43___   Mean = ___60___

7) 43, 21, 45, 7, 30, 4

    Mean = **25**

8) 5, 60, 28, 44, 5, 87, 23, 36

    Mean = **36**

9) 89, 80, 85, 83, 70, 100, 95

    Mean = **86**

10) 16, 10, 22, 0, 15, 9

    Mean = **12**

11) 25, 36, 34, 17, 38, 31, 50

    Mean = **33**

12) 99, 32, 29, 24, 62, 42, 79, 41

    Mean = **51**