fs4u

Maths Level 1

Section 6

Working with data and averages

fs4u

Maths Level 1

Working with data

You should already know:

✓ how to present data in simple tables, bar charts, pie charts and pictograms and include appropriate information

✓ how to interpret bar charts and pictograms

✓ what tally marks mean and how to use them.

By the end of this section you will know how to:
- collect and organise information using tally charts
- represent information using pictograms, bar charts and line graphs
- interpret data in more complex tables, charts and graphs

1 Collecting, recording and representing information

Collecting and recording data using tally charts

Learn the skill

One way of recording information collected from conducting a survey is to use a tally chart.

Example 1: A market researcher collects information on what brand of butter consumers prefer. She asks 20 customers and records the information on a tally chart.

Brand of butter	Tally	Frequency
Almost like butter	////	
Country Butter	///	
Golden Butter	/	
Buttery spread	~~////~~ ////	
Butter churn	///	

Remember

Tally marks are arranged in groups of five.

The responses from a further 10 customers are recorded below:

Buttery spread   Buttery churn   Country Butter
Almost like butter   Country Butter   Country Butter
Butter churn   Golden butter   Buttery spread
Buttery spread

Complete the tally chart to show all 30 responses.

A tally mark is put into the table whenever a customer says they like a particular brand of butter. When there are four tally marks in a group together, the fifth tally mark is then drawn across the group of four to make a group of five.

Brand of butter	Tally	Frequency
Almost like butter	ⵌ	5
Country Butter	ⵌ /	6
Golden Butter	//	2
Buttery spread	ⵌ ⵌ //	12
Butter churn	ⵌ	5

1. A librarian keeps a tally of the numbers of different types of books borrowed in one morning.

Day	Tally
fiction	ⵌ ⵌ ⵌ ////
literature	ⵌ ///
art	///
travel	ⵌ ⵌ //
science	ⵌ

   a How many fiction books were borrowed during the morning?_____

   b How many art and literature books were borrowed in total?_____

   c How many more travel books were borrowed than science books?_____

2. A questionnaire was designed to find out more about peoples' television viewing habits. One of the questions on the questionnaire is as follows:

Tick which type of television programme you like most:

comedy   soap opera   documentary   light entertainment   drama   sport

☐   ☐   ☐   ☐   ☐   ☐

The responses to this question are listed below:

Comedy, soap opera, comedy, sport, drama, comedy, sport, light entertainment, drama, comedy, sport, sport, sport, drama, drama, sport, comedy, soap opera, drama, documentary, comedy, sport, comedy, sport, drama, sport, sport, comedy, sport, drama

Organise this information into a tally chart, showing tally marks and frequencies for each type of television programme.

Type of programme	Tally marks	Frequency

Pictograms

When drawing a pictogram, choose a symbol to represent a fixed number of the items you are representing. Make sure the symbol is easy to draw.

Example 1: An estate agent sells 50 houses in September, 30 in October, 40 in November and 15 in December. Draw a pictogram to represent this information.

Use a simple house symbol which is easy to copy, like this one ⌂. As the frequencies are mostly in multiples of 10, it is sensible to let 1 house symbol represent 10 house sales.

Make sure the pictogram includes a title and a key showing what each symbol represents. Make sure also that you line up the symbols when you draw them (drawing the pictogram on 1 cm^2 squared paper will help with this).

Number of houses sold from September to December

September	⌂ ⌂ ⌂ ⌂ ⌂
October	⌂ ⌂ ⌂
November	⌂ ⌂ ⌂ ⌂
December	⌂ ⌐

Key

⌂ = 10 house sales

Bar charts

A bar chart can have vertical or horizontal bars.

When drawing bar charts, make sure you:

- draw bars with an equal width
- leave a fixed gap in between the bars
- use a ruler and a sharp pencil, and draw the bar chart on squared or graph paper
- choose a scale which is easy to read
- give the bar chart a title and label both axes.

Example 2: Draw a bar chart to represent the number of parcels posted at a local post office in one week.

Choosing the scale: letting each 1 square centimetre represent 5 parcels makes it easy to read the number of parcels. Letting squares represent 2, 5, 10, 20, 50 or multiples of 100 is recommended.

Number of parcels posted in one week at post office ← Title

The bars all have an equal width

Axis labels

Day
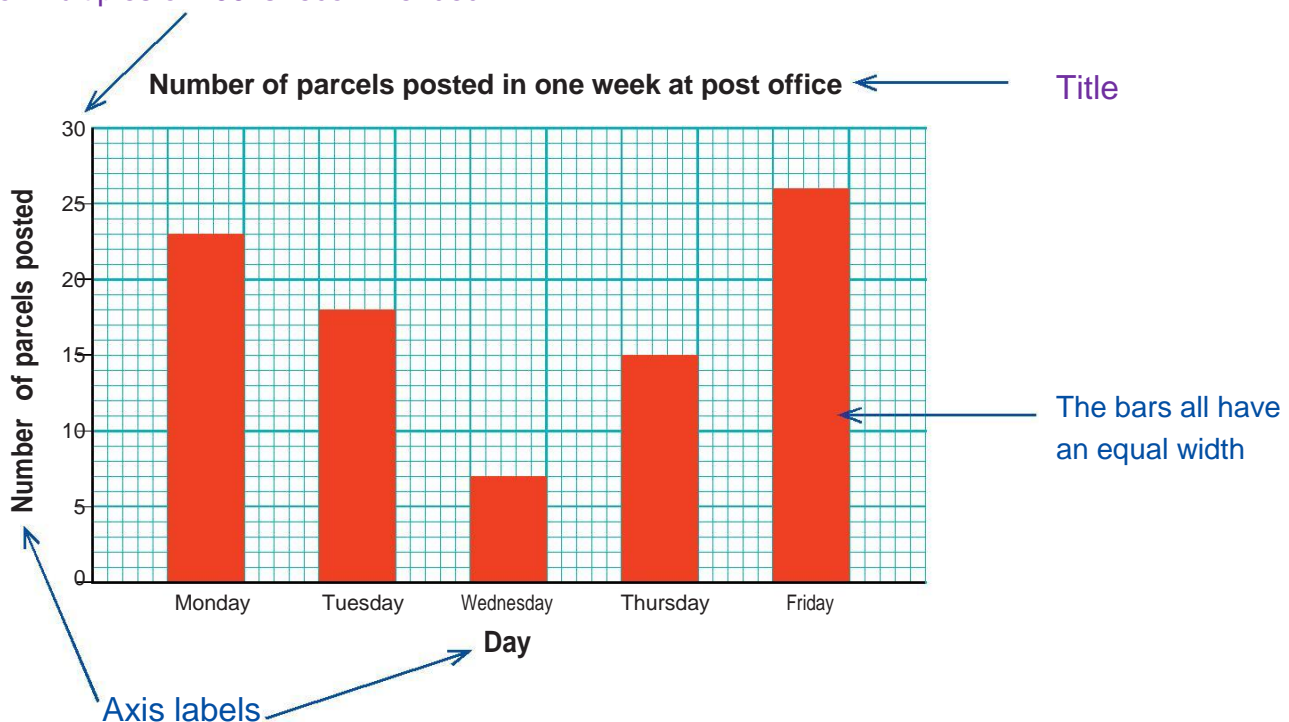
Line graphs

To draw a line graph, you need a set of points (called co-ordinates).

Remember to:

- label both axes
- give the line graph a title
- choose a scale which is easy to read.

Example 3: Alan is designing a rectangular pond for his garden. He works out how many square paving stones he needs to buy for ponds with different lengths.

The table shows the number of paving stones needed for ponds with different size lengths.

Pond length (m)	1	2	3	4	5
Number of paving stones	8	10	12	14	16
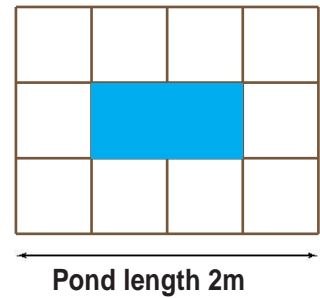
Pond length 2m

Draw a line graph to represent this information, with pond length on the horizontal axis.

The horizontal axis ends at 5. You may decide to choose the scale: 1 square represents 1 m.

The vertical axis data goes up in 2s and ends at 16. You may decide here to choose the scale: 1 square represents 2 paving stones.

Pond length 1 m has 8 paving stones: 1 and 8 form a co-ordinate on the graph.

Start from 0 on the horizontal axis, move 1 position across and 8 positions up. Plot a point.

Continue in this way with the other co-ordinates. Join the points up to form a straight line.

Number of paving stones for different pond sizes

Pond length in metres

99
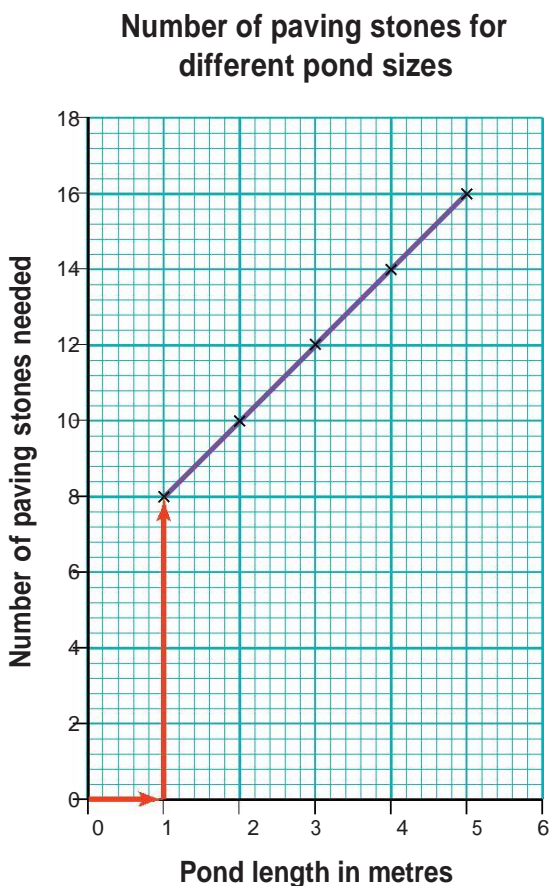
1. A doctor keeps a record of the numbers of different patient illnesses at a surgery in one day.

Illness	Flu	Infection	Headache	Virus	Other
Number of patients	23	14	5	29	17

On squared paper, draw a bar chart to represent this information.

2. A newsagent records the number of different newspapers he sells on Sunday.

Newspaper	Sunday Planet	The Moon	The Daily Best	The Star On Sunday
Number sold	24	30	8	14

Draw a pictogram to represent this information.

3. Georgia is training for a marathon. She notes down how far she has run after every 10 minutes:

Time (minutes)	10	20	30	40
Distance (miles)	0.75	1.5	2.25	3

a On squared paper, draw a line graph to show the distance Georgia ran in miles against the time in minutes. Use the horizontal axis to represent the time.

Challenge question!

b Use your line graph to estimate how far Georgia runs in 1 hour.

2 Interpreting data from tables and tally charts

Learn the skill

You need to be able to read the information in a table in order to solve a problem.

Example 1: The table shows the cost of a two-week skiing trip in different countries.

What is the cost of a two-week skiing trip to Italy on half-board?

Country	SC	BB	HB
Austria	£245	£205	£189
Bulgaria	£202	£302	£253
France	£149	£258	£149
Italy	£199	£214	£209
Norway	£259	–	£413

Key: SC self-catering; BB bed and breakfast; HB half-board

First, use the key to find out how half-board is shown in the table: in this case it is shown by HB, so you only need to look at the data in this column.

Now find Italy and read across this row to find the HB value.

Answer: £209

When you collect information, you need a way to record and organise it.

Tally marks are easy to use and quick to count.

Example 2: Three traffic surveyors record the number of vehicles entering a danger zone in 10 minutes. How many more vehicles did Surveyor C record than Surveyor A?

Surveyor A	卌 ///
Surveyor B	卌 //
Surveyor C	卌 卌

Each 卌 group of tallies counts as 5.
So, Surveyor C recorded 10 and Surveyor A recorded 8.

Answer: 2 vehicles

1. Here is part of a catalogue featuring digital cameras.

Item number	Catalogue number	Megapixels	Zoom	Price
1	680/453	3.5	3×	£69.75
2	680/454	4	3×	£79.75
3	680/455	4	4×	£99.99
4	680/456	5	4×	£109.25

  a What is the price of the camera that has four megapixels and a 4× zoom?

  b What is the catalogue number of the camera that has a 3× zoom and has four megapixels?

2. Llinos works at a spa treatment centre. As part of her job, she keeps a tally of the numbers of different types of treatments clients have over one week. This table shows the results:

Treatment	Number taken each day
massage	~~IIII~~ ~~IIII~~ ~~IIII~~ IIII
seaweed wrap	~~IIII~~ III
facial	~~IIII~~ ~~IIII~~ ~~IIII~~ ~~IIII~~ III
reflexology	II
waxing	IIII

  a How many more facials were there than waxing treatments? _____

  b How many seaweed wraps and massages were there in total?_____

3. A couple going on a three-week holiday to Europe are planning to buy holiday insurance. Use the table to answer these questions:

  a How much will they pay for their insurance?

  _____

  b How much extra will the insurance cost them if they take their young son?_____

Insurance	Adult	Couple	Family
Europe 1 week (up to 8 days)	£15	£24	£40
Europe 2 weeks (up to 15 days)	£25	£45	£50
Europe 1 year	£30	£55	£75
Worldwide 1 week (up to 8 days)	£30	£48	£70

3 Interpreting bar charts and pie charts

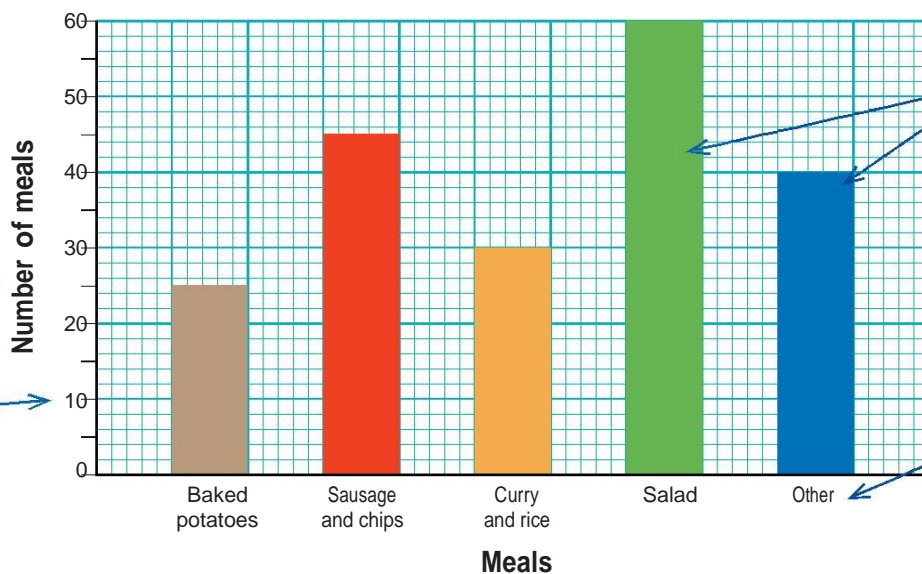## Learn the skill

▷ A bar chart uses bars to show patterns in data.

This bar chart shows the meals chosen in a canteen one lunchtime.

The bar chart should have a title.

The numbers of items should be easy to read.

Meals chosen at canteen

The vertical axis should have a scale and a label.

The horizontal axis should be labelled with categories of data.

a First, read the bar values for the two meals: baked potato (25) and salad (60). 'How many more' tells you to subtract: 60 − 25 = 35

Answer: 35 meals

b Read every bar value and add them all together: 25 + 45 + 30 + 60 + 40 = 200

Answer: 200 meals

▷ Pie charts show the proportions of different types of data.

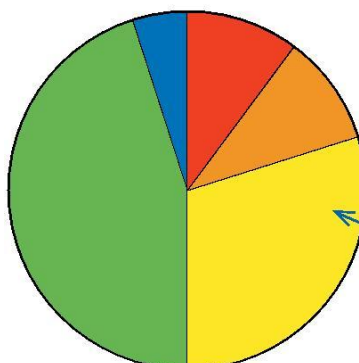You use a pie chart to compare the sizes of the categories.

The pie chart should have a title.

There is a key to explain the different sectors.

Daily newspaper deliveries for Crampton Street

Key:
- Daily Mail
- Daily Express
- The Sun
- The Guardian
- The Times

Tip

Pie charts do not show actual amounts unless the information is added.

It is easy to compare the sizes of the categories.

Example 2: The pie chart shows the daily newspaper deliveries for Crampton Street.
a Which is the least popular newspaper?
b Which newspaper accounts for roughly half of the deliveries?

a The least popular choice is shown by the smallest sector: blue. Use the key to work out which newspaper this is.

Answer: The Times

b The green sector takes up almost half of the pie chart. Use the key to find out which newspaper this is.

Answer: The Guardian

Try the skill

1. A Saturday afternoon TV sports programme showed four sports. The bar chart shows the number of hours given to each sport in the programme.

a How long was the programme, in total?

_____

b Which sports were given the same viewing time?

_____

c How many more hours were given to football than cricket?

_____

Sports shown in a TV programme

Number of hours (y-axis): 0, 1, 2

Sport (x-axis): Football, Rugby, Cricket, Motor racing
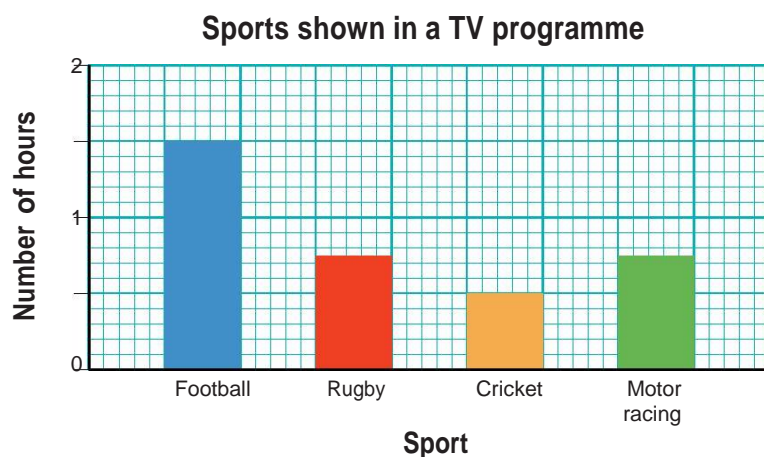
2. The pie chart shows the weather in a UK city for the month of February.

Weather in February

Key:
- Rain
- Sunshine
- Cloud
- Snow

  a Ring each statement that is true.

  A A quarter of the days were cloudy.

  B There were twice as many rainy days as sunny.

  C A third of the days were sunny.

  b Which type of weather was roughly twice as common as snow?

  _____
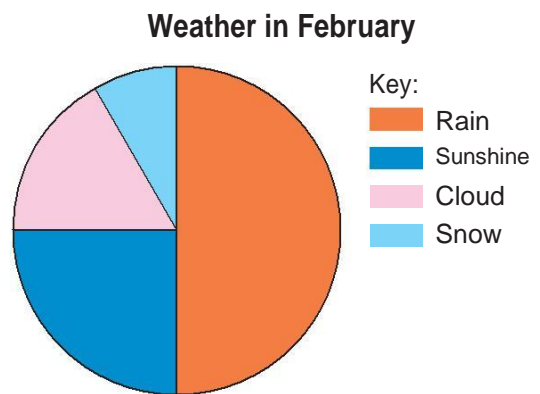
3. A shopkeeper recorded how many items she sold each day over a five-day period. She presented her sale figures on this bar chart. What is missing from the bar chart?

_____

4 Interpreting pictograms and line graphs

Learn the skill

▷ Pictograms use pictures to show patterns in data.

Number of plasma TVs sold

The pictogram should have a title.

Key:

= 4 plasma TVs

The key shows how many items the symbol represents.

A simple symbol is used to represent a number of items.
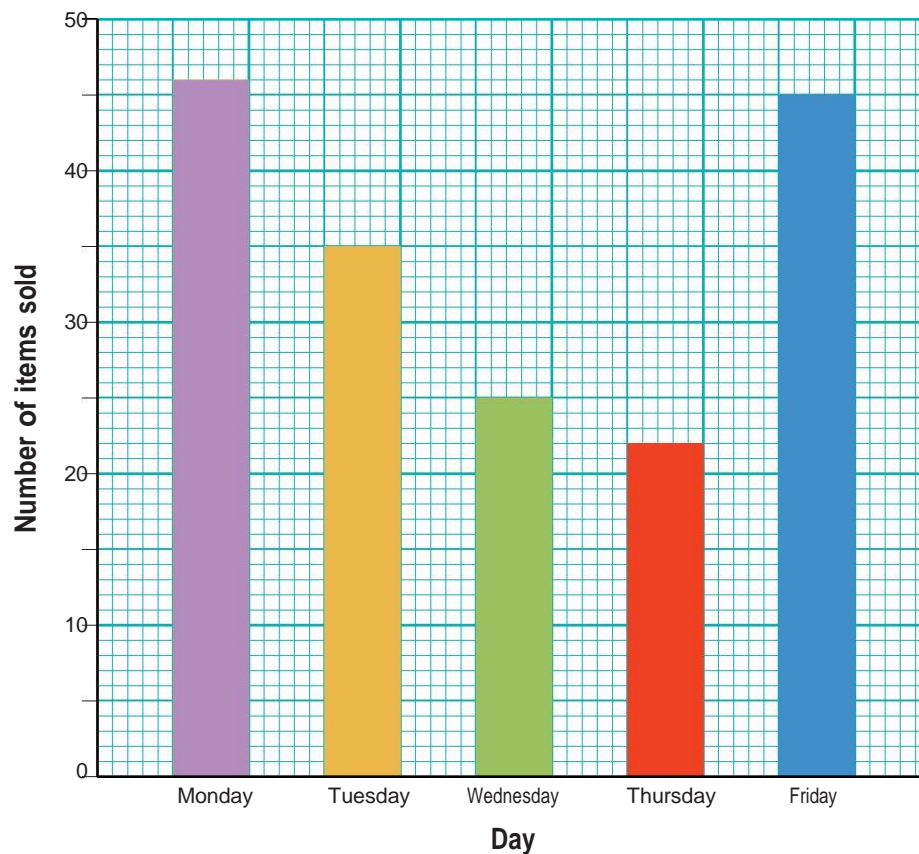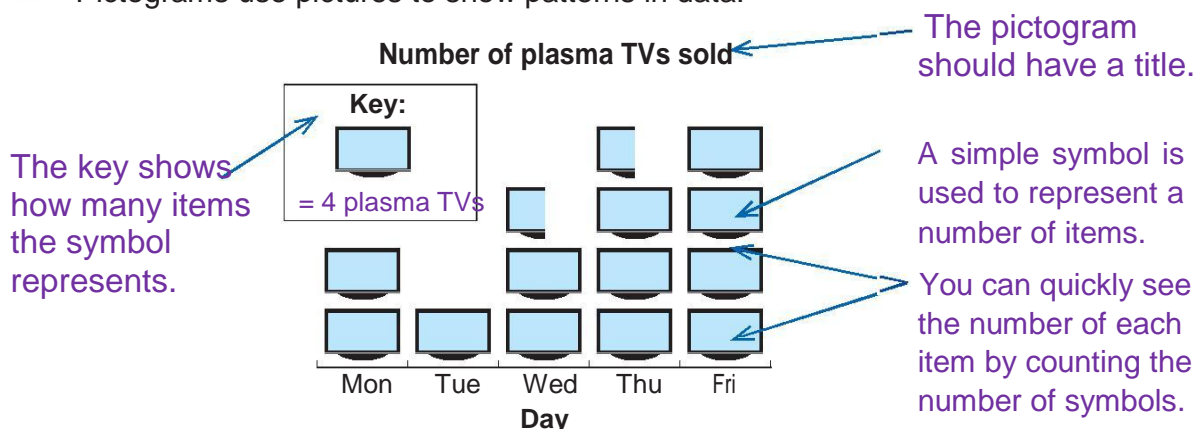
You can quickly see the number of each item by counting the number of symbols.

Mon   Tue   Wed   Thu   Fri
Day

Example 1: The pictogram above shows the numbers of plasma TVs sold at a local store in one week. How many more plasma TVs were sold on Friday than on Wednesday?

First, read the key to find out how many TVs one represents: 4.

Now work out how many TVs were sold on the two days.
Wednesday ($2\frac{1}{2}$ symbols): $2\frac{1}{2} \times 4 = 4 + 4 + 2 = 10$
Friday (4 symbols): $4 \times 4 = 16$

Now subtract to find the difference: $16 - 10 = 6$

Answer: six plasma TVs

Remember

A symbol in a pictogram can represent more than one item.

▷ Line graphs are used to convert between quantities and to show changes over time.

Conversion graph for miles and kilometres

The line graph should have a title.

The vertical axis can represent any type of value.

The horizontal and vertical axes must both be labelled with units.

The graph shows how one quantity relates to another.

Kilometres (vertical axis: 0, 2, 4, 6, 8)
Miles (horizontal axis: 0, 1, 2, 3, 4, 5)
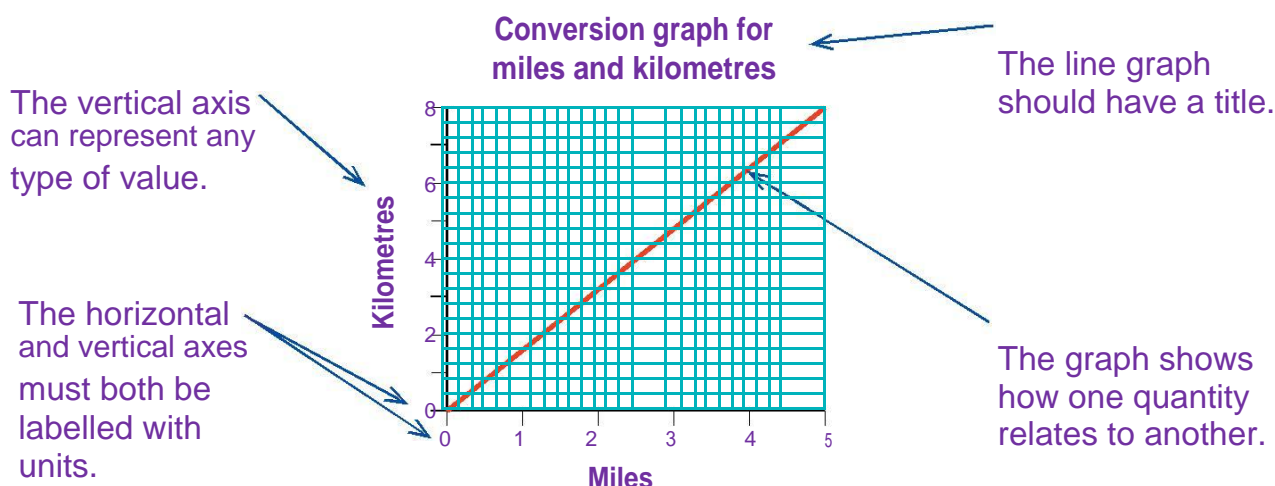
Example 2: The line graph above shows the relationship between miles and kilometres. Two towns are three miles apart. How many kilometres is this?

First, find 3 on the miles (horizontal) axis.

Read straight up from this to the graph line.

Then read straight across to the vertical axis to find the number of kilometres.

Answer: 4.8 km

Practise the skill

1. The pictogram shows the number of homes rented out in one month by a letting agent.

   a How many 3-bedroom homes were let that month?

   _____

   b How many more 2-bedroom homes were let than 4-bedroom homes?

   _____

Number of homes let

Key:

= 2 homes

1-bedroom   2-bedroom   3-bedroom   4-bedroom

Type of home
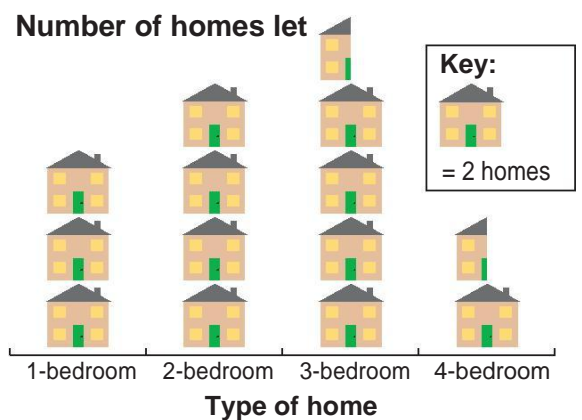
2. The line graph shows the temperature in an oven from two to seven minutes after it is switched on.

   a What is the temperature in the oven after 3 minutes?

   _____

   b How long does it take the oven to reach 150 °C?

   _____

   c How much does the temperature increase between four and six minutes after the oven is switched on?

   _____

Oven temperature

Temperature (°C)

Minutes
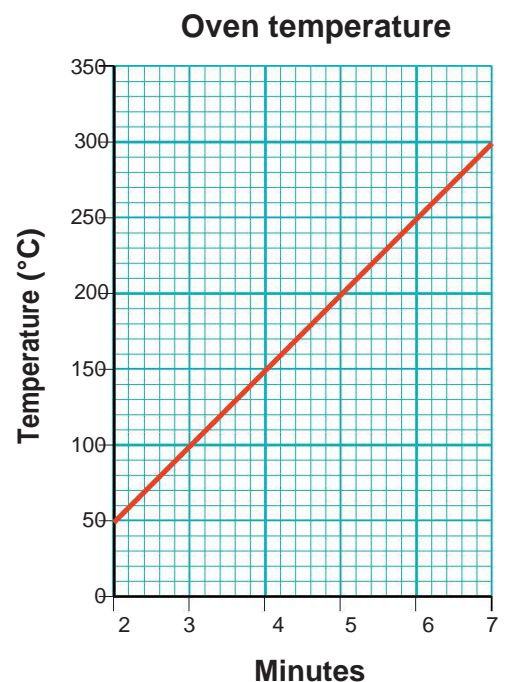
3. The pictogram shows the number of mobile phones sold at a shop over three weekends. What is missing from the pictogram?

_____

Number of mobile phones sold

Weekend 1   Weekend 2   Weekend 3
Period
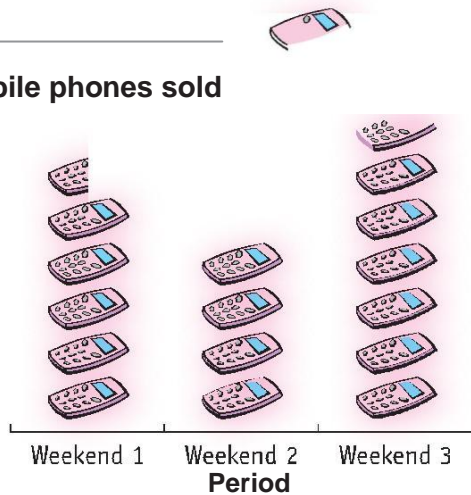
4. A holiday brochure shows the typical temperatures in Sydney. What is missing from the graph?

_____

Mean daily maximum temperature

Months
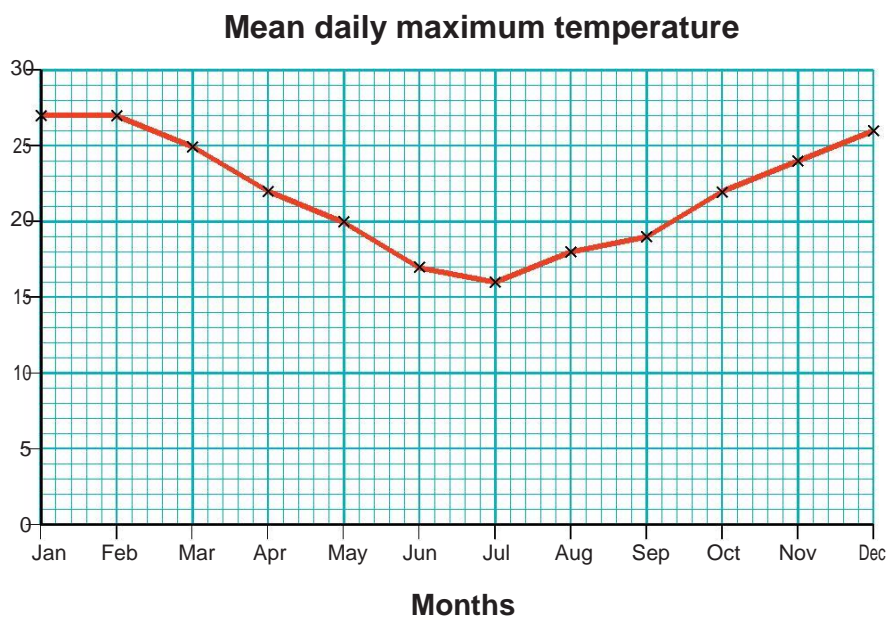
5 Remember what you have learned

▷ A_____ _____ uses bars to show patterns in data.

▷ _____ _____ show the proportions of different types of data.

▷ _____ use pictures to show patterns in data.

▷ _____ _____ are used to convert between quantities and to show changes over time.

Practise the skill

1. A manager records the times deliveries are made to his depot. This chart shows the results.

How many deliveries are made between 9:00 and 11:00?

A ☐	15
B ☐	40
C ☐	50
D ☐	70

Number of lorries making deliveries

Number of lorries (y-axis, 0 to 30)

Time (x-axis): 7:00 – 8:00, 8:00 – 9:00, 9:00 – 10:00, 10:00 – 11:00, 11:00 – 12:00, 12:00 – 13:00
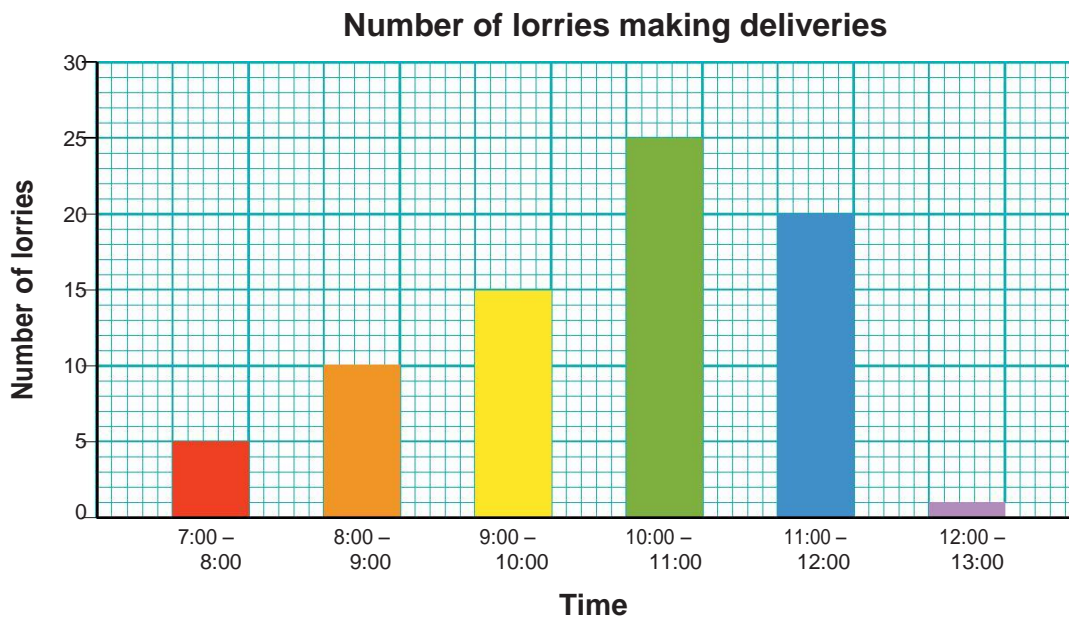
2. The chart shows the numbers of people who went on four rides at a theme park one Thursday morning.
What is missing from the chart?

Rides
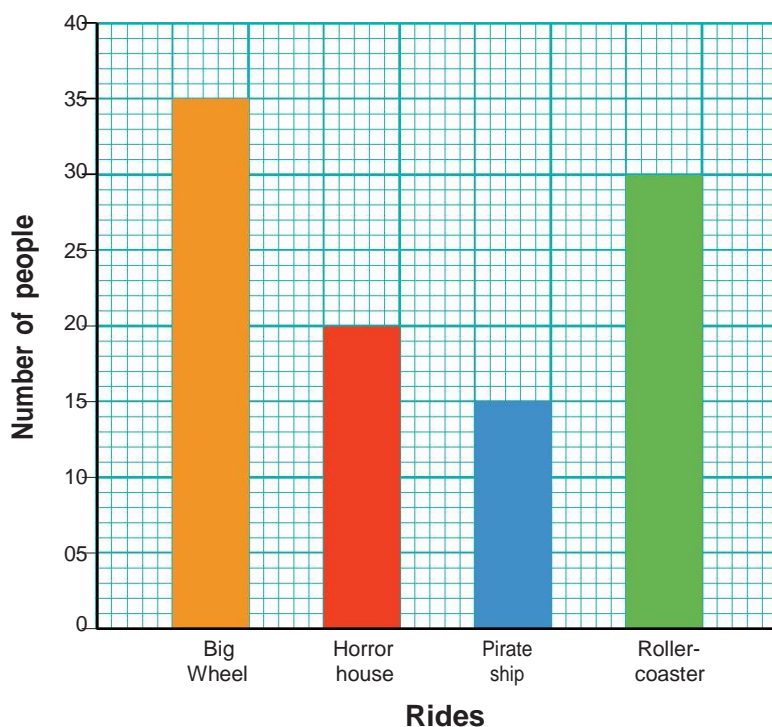
A ☐ Scale for the number of people

B ☐ Title

C ☐ Labels to show what the bars mean

D ☐ Label for the vertical axis

3. The pictogram shows the numbers of calculators sold in one day at an electronics shop.

How many Casio calculators were sold that day?

Numbers of calculators sold

Make of calculator sold
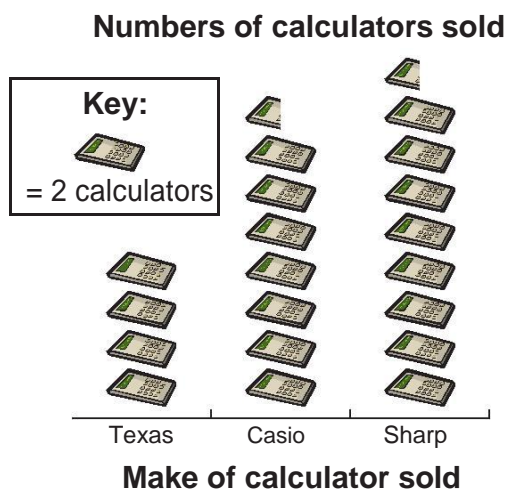
A ☐ 9

B ☐ 15

C ☐ 17

D ☐ 18

4. A nurse measures, records and plots a patient's temperature and draws this graph.

What is missing from the graph?

Patient's temperature readings

Temperature

Time of day

5. A builder uses the line graph to find the price of the wood according to the number of metres a customer wants.

How much will 2.5 metres of wood cost?

Price of wood per metre

Price of wood (£)

Number of metres
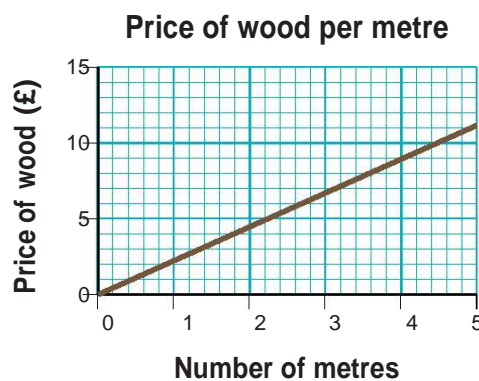
A ☐ £2.80

B ☐ £5.60

C ☐ £7.00

D ☐ £8.40

6. The manager of a day care centre keeps a tally chart of how many people attend each day. Each session can take up to 24 people.

A ☐ 0

B ☐ 6

C ☐ 7

D ☐ 18

Number of people attending the day care centre

	Morning session	Afternoon session
Mon	ℍℍ ℍℍ ℍℍ ℍℍ ℍℍ	ℍℍ ℍℍ ℍℍℍ
Tues	ℍℍ ℍℍ ℍℍ ℍℍ	ℍℍ ℍℍ ℍℍ ℍℍ
Weds	ℍℍ ℍℍ ℍℍ ℍℍ ℍℍℍ	ℍℍ ℍℍℍℍ
Thur	ℍℍ ℍℍ ℍℍℍ	ℍℍ ℍℍℍ
Fri	ℍℍ ℍℍ ℍℍℍℍ	ℍℍℍ ℍℍℍ

How many more patients can the manager accept on a Tuesday morning session?

J Working with mean and range

You should already know how to:

➤ add, subtract and divide numbers with up to two places of decimals.

By the end of this section you will know how to:
- calculate the mean of up to ten items of data
- calculate the range of up to ten items of data.

1 Understanding mean

Calculating the mean

Learn the skill

An **average** is a single value that represents a set of numbers.

The **mean** is one particular type of average.

▷ To calculate the mean:
  ▷ add up all the values
  ▷ divide by the number of values.

Example 1: Find the mean of these values: 2, 11, 8, 6, 3.

First, add the values: 2 + 11 + 8 + 6 + 3 = 30
Then divide the total by the number of values:
30 ÷ 5 = 6   Answer: 6

Example 2: Find the mean of these temperatures recorded at noon over five days.

Monday	Tuesday	Wednesday	Thursday	Friday
5 °C	3 °C	3 °C	0 °C	2 °C

Add the values: 5 + 3 + 3 + 0 + 2 = 13
Divide the total by the number of values:
13 ÷ 5 = 2.6   Answer: 2.6 °C

1. Find the mean of each of these sets of values.

   a 12, 4, 14, 3, 7 _____

   b 5 cm, 4 cm, 0 cm, 2 cm, 2 cm,
   8 cm, 3 cm, 4 cm, 4 cm, 5 cm_____

   c £2.50, £1.24, £1.22, £1.60 _____

2. To help her budget, Ayako made a record of how much she spent each week for four weeks. What is the mean amount she spent per week?

Week 1	Week 2	Week 3	Week 4
£48	£50	£32	£20

   _____

3. The table below shows the normal number of hours of sunshine each day in the Algarve for the months of January to September.

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
5	7	8	9	10	11	12	10	9

   What is the mean number of daily hours of sunshine for the months shown?

   _____

4. A parent researched the price of eight different drinks for children, four fizzy drinks and four fruit juices. His aim was to compare the mean price of fizzy drinks with fruit juices to see which was cheaper.

Fruit juice	Price per 300 ml	Fizzy drink	Price per 300 ml
A	45p	A	55p
B	65p	B	85p
C	70p	C	50p
D	60p	D	60p

   a What is the mean price of fruit juice per 300 ml?

   _____

   b What is the mean price of fizzy drink per 300 ml?

   _____

   c Which drink is more expensive, on average?

   _____

5. A cosmetics company offers a bonus to the sales team with the highest average weekly sales. Which team will win, based on the results of the first five weeks?

	Week 1	Week 2	Week 3	Week 4	Week 5
Team A sales (£)	1067	1258	2164	1775	2234
Team B sales (£)	1578	987	2430	1855	2032

   _____

The effect on the mean when a few numbers are very different to the majority

Example 1: A cafe manager employs 5 assistants. Here are their salaries.

£9000,   £10 000,   £12 000,   £12 000,   £12, 000

   a What is their mean salary?

   b The manager has a salary of £26 000. What is the mean salary of all 6 employees?

   a 9 000 + 10 000 + 12 000 + 12 000 + 12 000 = 55 000
     55 000 ÷ 5 = 11 000

<div align="right">Answer: £11 000</div>

   b 55 000 + 26 000 = 81 000
     81 000 ÷ 6 = 13 500

<div align="right">Answer: £13 500</div>

Note that the mean average of all 6 employees is £13 500, yet only the manager earns over this amount.

The manager's salary is much higher than the salaries of the other employees. This increases the mean value to £13 500, yet 5 employees earn less than this amount.

Tip

If 1 or 2 values are very different to the others, the mean value will not be close to any of the actual values.

Calculating the mean when the question gives you the total value

To find the mean you need to decide which number to divide by.

Example 2: A gardener plants 40 bulbs in one hour. What is the mean time taken to plant one bulb?

To find the mean time taken to plant one bulb, divide the total time by the number of bulbs.

60 ÷ 40 = 1.5 minutes   Answer: 1.5 minutes

Tip

Check to make sure your answer is sensible. 1.5 mins for 1 bulb means:
3 mins for 2 bulbs
30 mins for 20 bulbs
60 mins for 40 bulbs

Example 3: A taxi driver makes 50 journeys and drives a total of 200 miles. What is the mean distance per journey?

Total distance: 200 miles

To find the mean distance travelled per journey, divide the total distance by the number of journeys.

200 ÷ 50 = 4 miles   Answer: 4 miles

Tip

'What is the mean distance' indicates that you should divide the total distance by the number of journeys, not the other way round.

1. A man at the records office in Barnsley wants to know how many people live in a street in Rotherham.

House number	1	3	5	7	9	11	13	15	17	19
People	3	1	2	4	2	2	2	2	1	1

   a What is the **mean** number of people in a house?

   _____

   The couple at no.15 has a daughter. Their daughter is married and has 5 children. Suppose their daughter, her husband and the children move in with them, meaning there are now 9 people living at number 15.

   b Now what is the **mean** number of people per house?

   _____

   c What if the couple's 2 sons moved in too with their wives? What is the **mean** number of people per house when there are 13 people living at no.15?

   _____

   d Is the answer to part **c** a reasonable estimate of the number of people in each house?

   _____

   e On the next street, there are 6 houses and the mean number of people in each house is 3.

   How many people live on the street altogether?

   _____

   Challenge question!

2. A worker in a call centre takes 30 calls in 15 minutes. What is the mean time she takes to answer each call?

   _____

   Tip

   Find the total time and then divide by the number of calls.

3. A lorry makes 40 deliveries and travels a total of 400 miles. How many miles, on average, is each delivery?

   _____

4. In the first round of a football competition, 20 teams score a total of 50 goals. What is the average number of goals scored by each team?

   _____

   Tip

   To find the **average number of goals**, find the **total number** of goals first (50) and then divide this by the **number of teams** (20).

5. A market stall holder works for 20 hours and makes £450 in total. On average, how much does he make per hour?

   _____

2 Understanding range

Learn the skill

The **range** of a set of data tells you how widely the numbers are spread.

▷ The range = the **biggest value** – the **smallest value**.

Example 1: Find the range of these numbers: 5, 7, 2, 8, 8, 6, 12, 3.

The biggest value is: 12

The smallest value is: 2

The range is the difference: 12 – 2 = 10   Answer: 10

Example 2: The temperature outside a glasshouse was recorded daily at 9:00am over five days. The results are given in the table below. What is the range?

Monday	Tuesday	Wednesday	Thursday	Friday
4°C	1°C	0°C	2°C	2°C

The highest temperature is 4°C.

The lowest temperature is 0°C.

The range is the difference: 4 – 0 = 4   Answer: 4⁰C

Try the skill!

1. Find the range of each of these data sets.

   a 9, 13, 1, 8, 2, 3

   _____

   b 14°C, 0°C, 1°C, 15°C, 7°C

   _____

   c £3.00, £1.20, £4.50, £6.30, £2.00, £9.10

   _____

2. The table shows how many cars a salesman sold each month, over a six-month period.

April	May	June	July	August	September
12	10	6	12	6	8

What is the range of the numbers of vehicles he has sold from April to September?

_____

3 Remember what you have learned

First complete this …

▷ To calculate the mean:

   ▷ _____ up all the values

   ▷ _____ by the number of values.

▷ The range = the_____ value – the _____ value.

Practise the skill

1. The temperature in a health clinic was measured and recorded every day, at 9:00am, from Monday to Friday. The results are shown in the table.

Mon	Tues	Weds	Thurs	Fri
19 °C	19 °C	23 °C	21 °C	28 °C

What was the mean daily temperature at 9:00am in the clinic over these five days?

A ☐ 19 °C
B ☐ 21 °C
C ☐ 22 °C
D ☐ 23 °C

2. In five days an estate agent sold 25 houses.

How many did she sell per day, on average?

A ☐ 3
B ☐ 4
C ☐ 5
D ☐ 6

3. A dentist used this table to record the numbers of patients seen in a week. Use the table to answer questions 3 and 4.

Mon	Tues	Weds	Thurs	Fri
20	15	18	16	15

What is the range of the numbers of patients seen by the dentist?

A ☐ 4
B ☐ 5
C ☐ 15
D ☐ 16

4. Use the data in question 3 to answer this question.

Which calculation gives the mean number of patients seen each day by the dentist over these five days?

A ☐ $\dfrac{20 + 15 + 18 + 16 + 15}{5}$

B ☐ $\dfrac{20 + 15 + 18 + 16 + 15}{7}$

C ☐ $\dfrac{5}{20 + 15 + 18 + 16 + 15}$

D ☐ $\dfrac{7}{20 + 15 + 18 + 16 + 15}$

5. The table shows the amounts of money a man withdrew from a cash machine over five days.

Mon	Tues	Weds	Thurs	Fri
£20	£50	£0	£20	£100

What is the range of the amounts he withdrew over this period?

A ☐ £20
B ☐ £50
C ☐ £95
D ☐ £100

6. A woman is training for a race. She records the number of minutes she runs each day for one week, as shown in the table.

Mon	Tues	Weds	Thurs	Fri	Sat	Sun
44	41	41	45	41	40	42

What is the mean amount of time she spends running each day?

A ☐ 40 minutes
B ☐ 41 minutes
C ☐ 42 minutes
D ☐ 45 minutes

7. Five friends took part in a sponsored run and recorded the amounts they collected in the table shown.

Runner	Amount
Ali	£10.00
David	£24.00
Mel	£23.50
Nuala	£42.50
Shazira	£60.00

What is the mean amount of sponsorship money collected per person?

A ☐ £30
B ☐ £32
C ☐ £35
D ☐ £160

8. Use the data in question 7 to answer this question.

What is the range of the amounts of sponsorship money collected?

A ☐ £60
B ☐ £50
C ☐ £10
D ☐ £35

9. A man drove 386 miles over four days. The amounts of fuel he used each day are shown in the table. He wants to work out how much fuel he used each day, on average.

To do this, he needs to add the number of litres used and then:

Day	Fuel (litres)
1	10
2	11
3	9
4	16

A ☐ divide by 4
B ☐ multiply by 4
C ☐ divide by 386
D ☐ subtract from 386