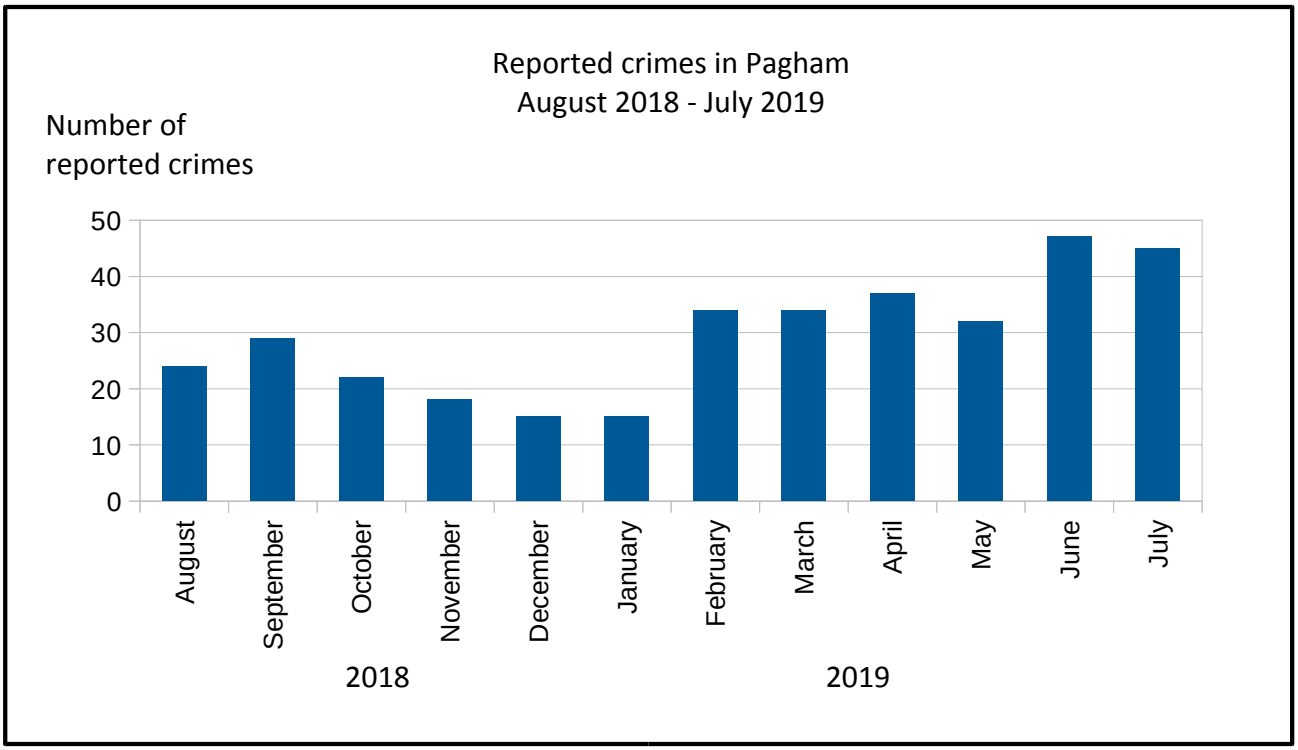
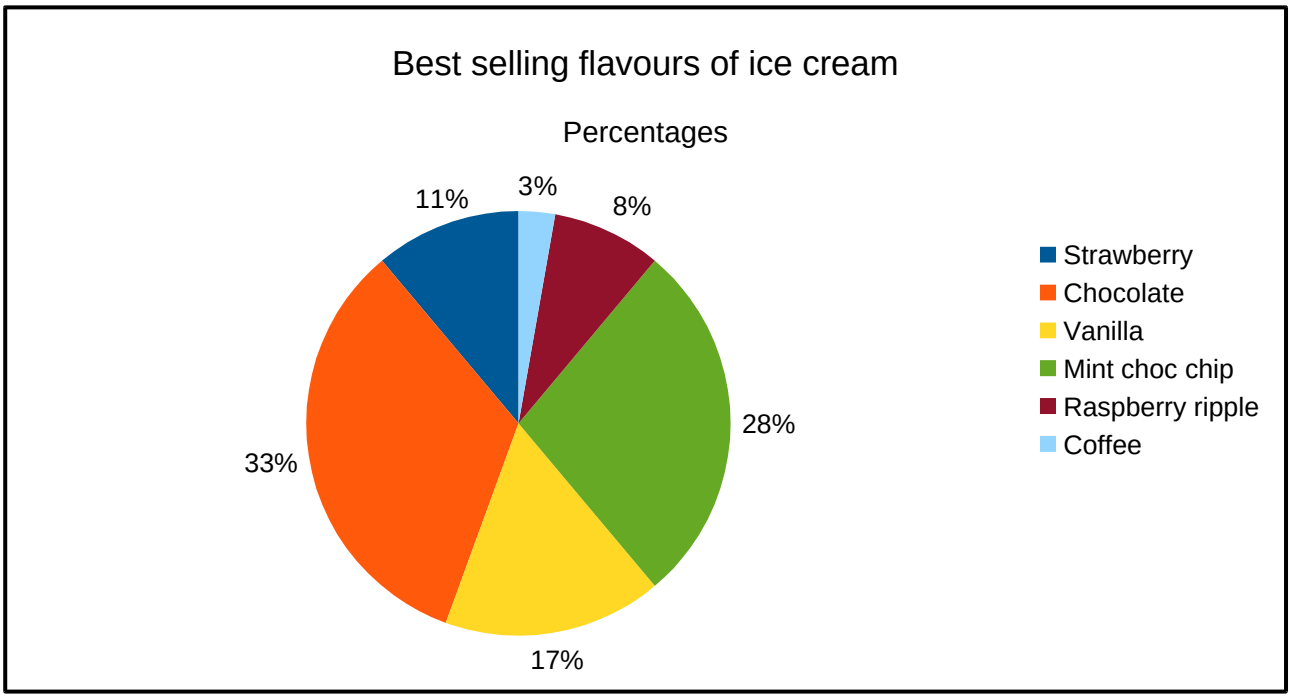
# Can you interpret these diagrams?

1



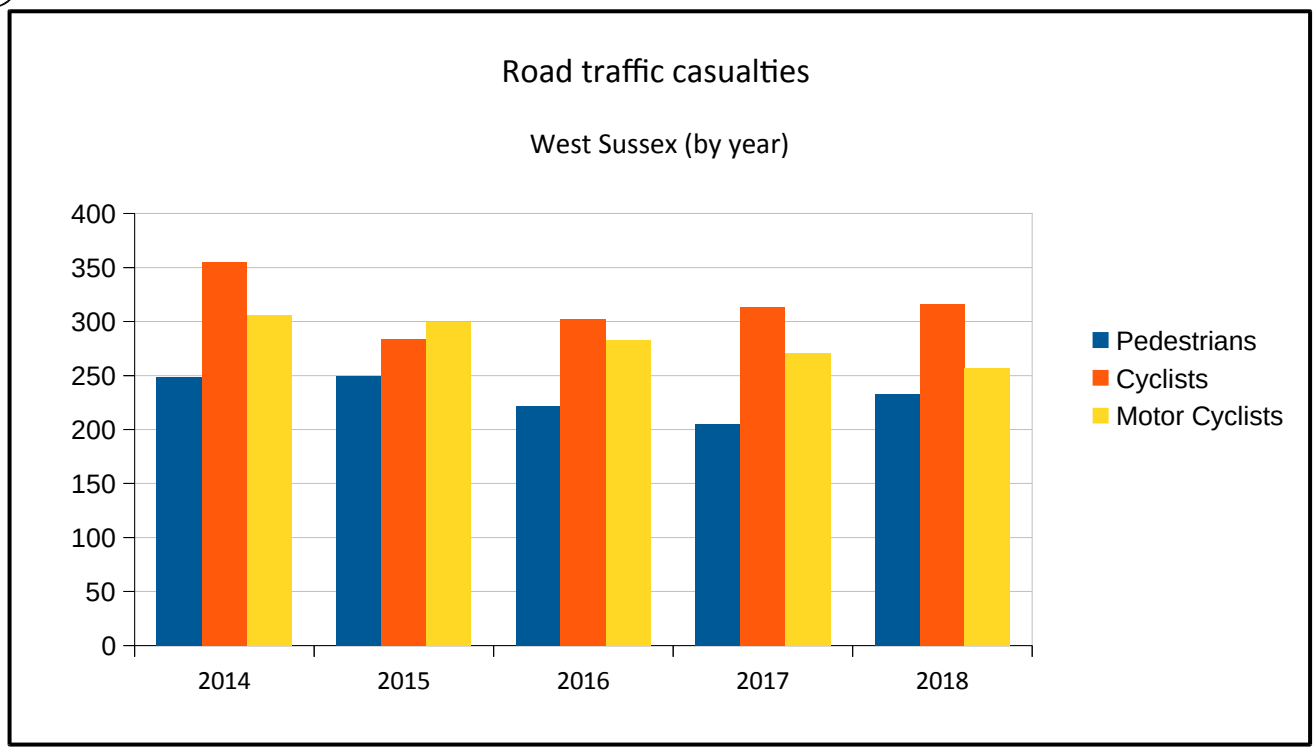

2



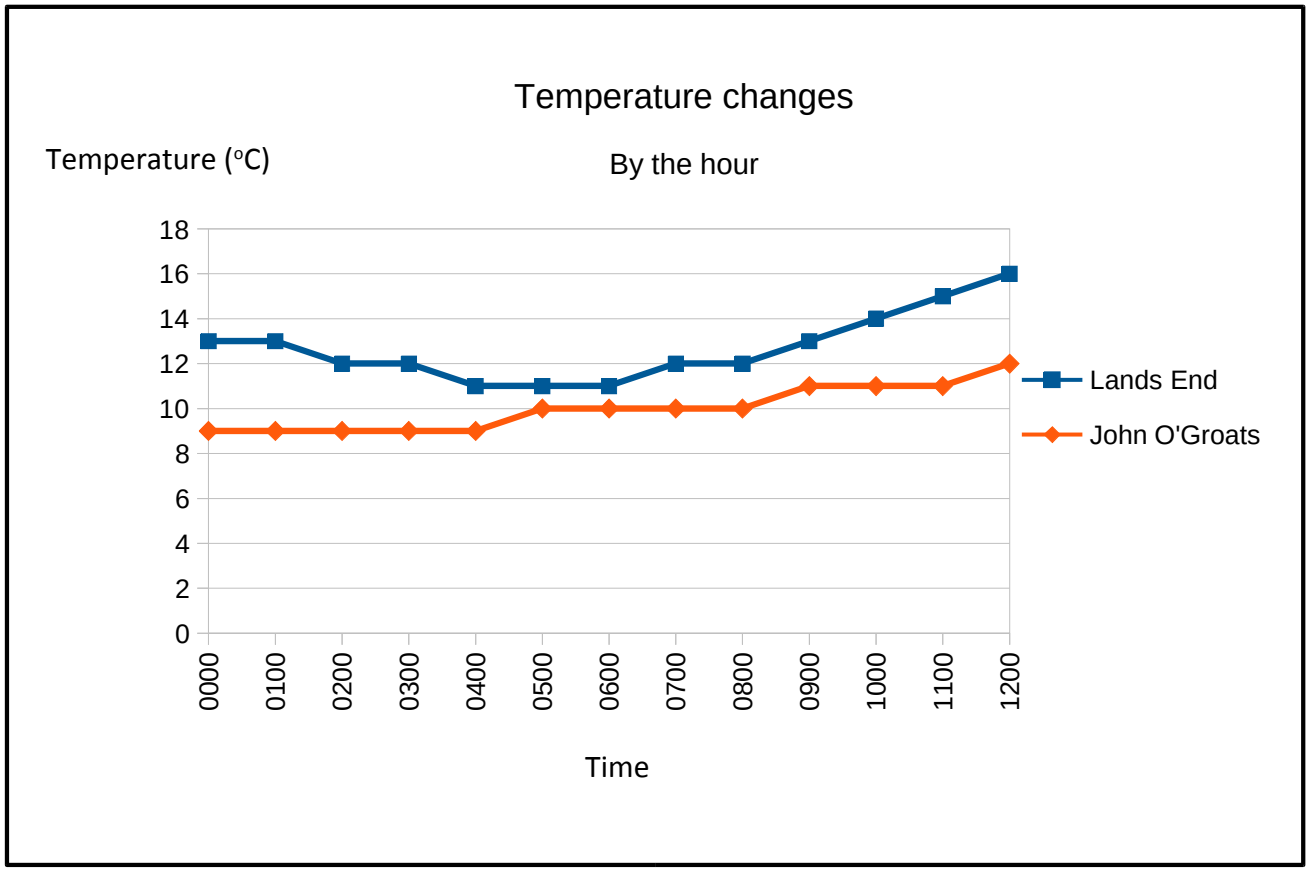
# Statistical diagrams

## Can you interpret these diagrams?

3

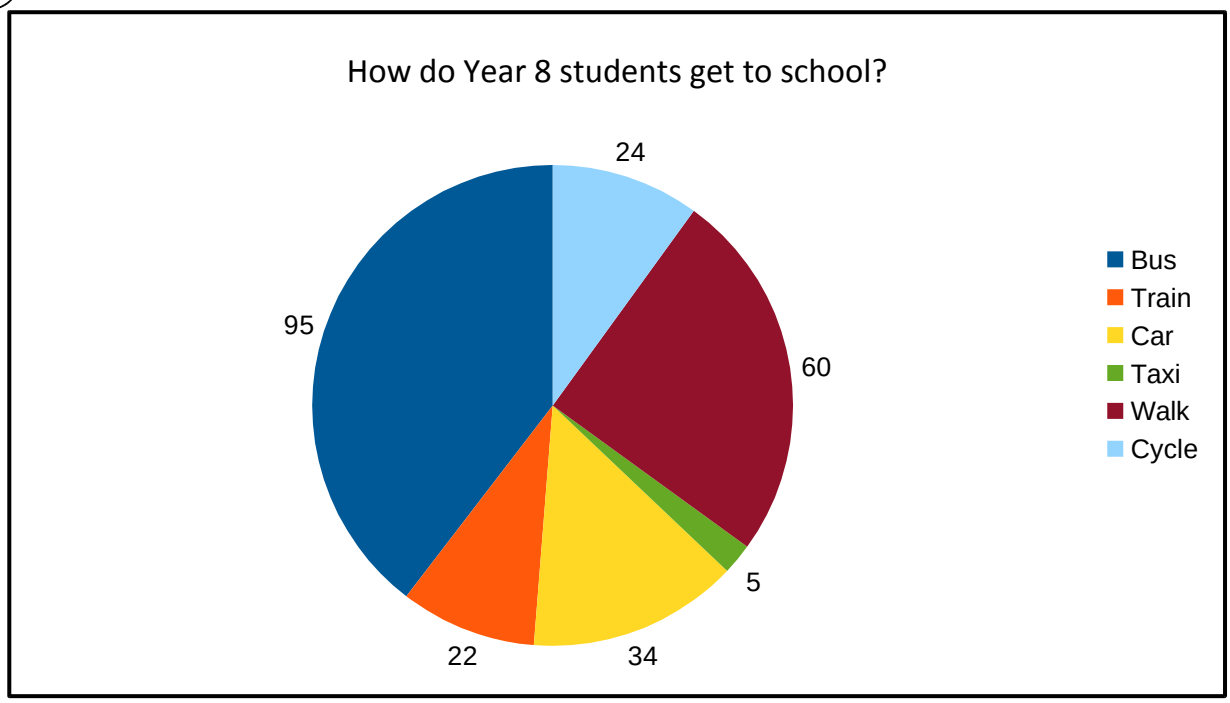



4

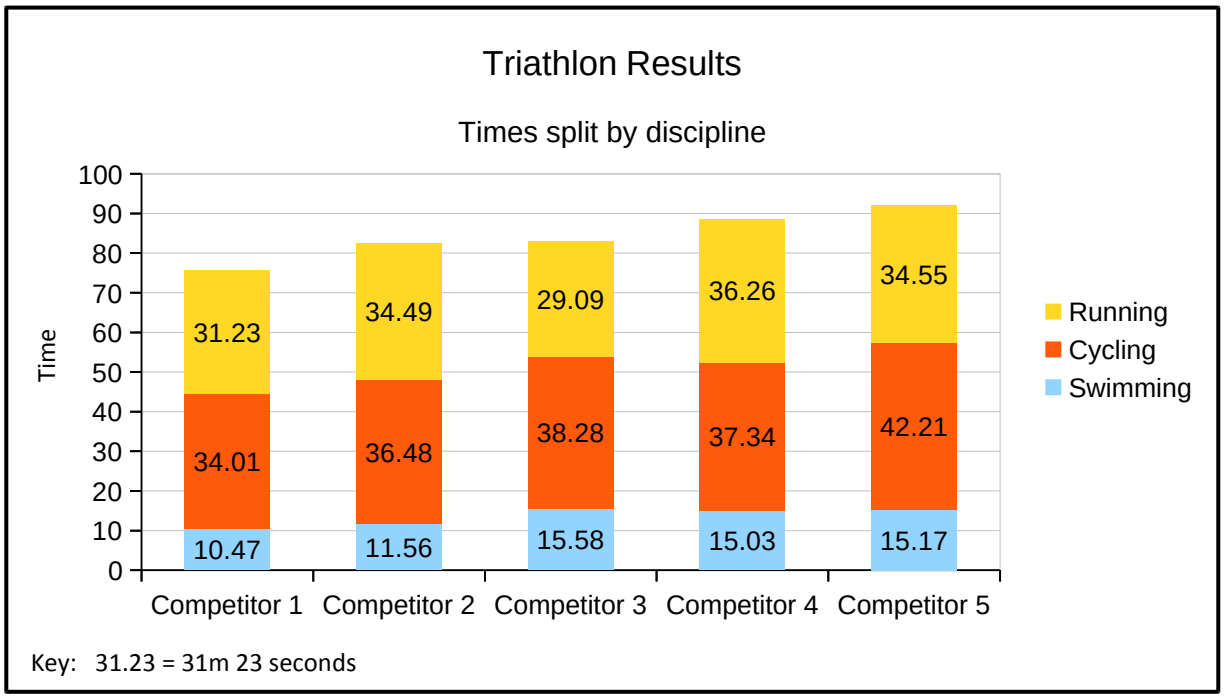


# Can you interpret these diagrams?

5



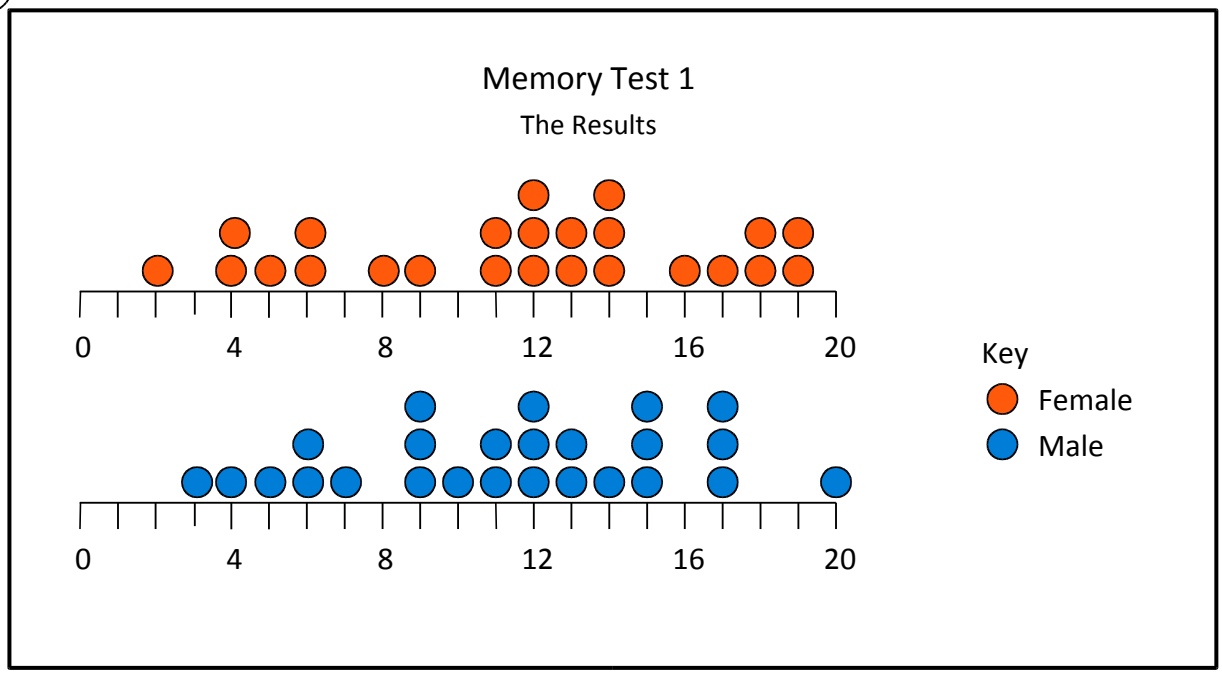

6



# Statistical diagrams

## Can you interpret these diagrams?

7




8

Memory Test 2

The Results

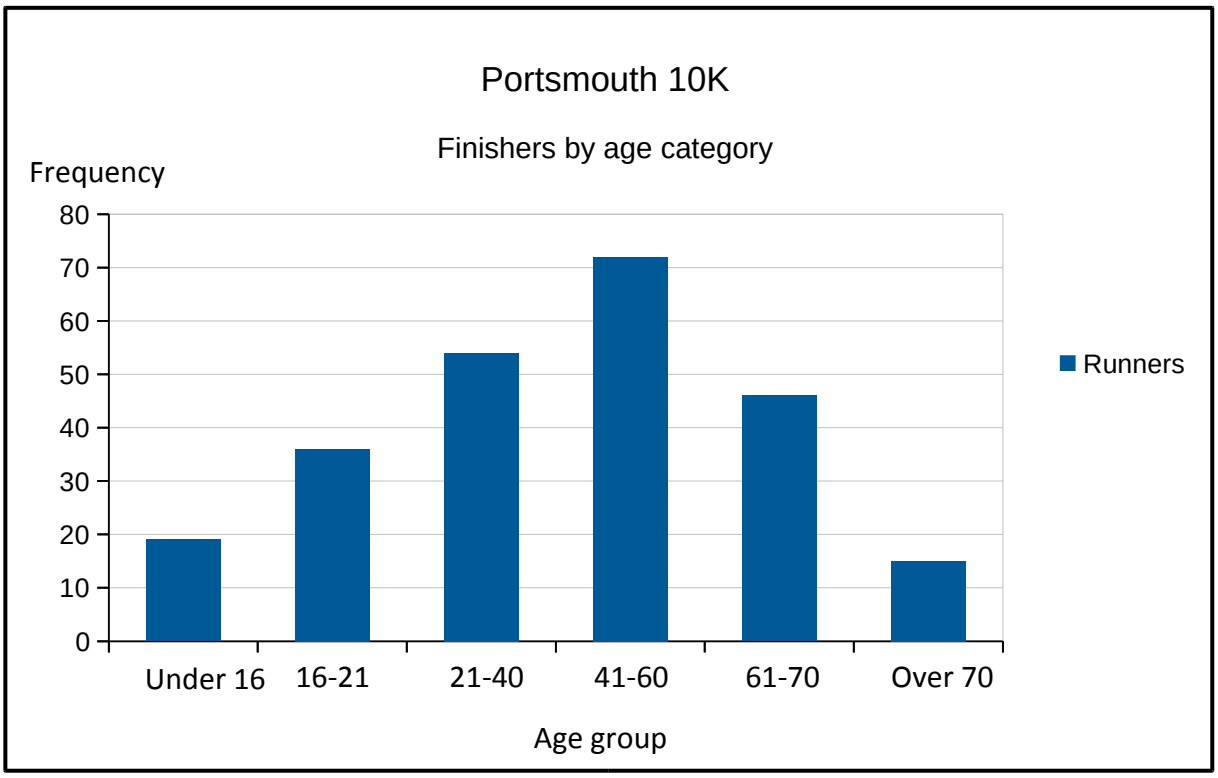
| Female | | | Male | |
|---|---|---|---|---|
| (2) | 7 5 5 | 0 | 5 6 | (2) |
| (3) | 4 1 | 1 | 0 0 1 4 | (4) |
| (5) | 9 8 7 6 5 | 1 | 5 6 6 6 7 8 | (6) |
| (5) | 3 3 2 1 0 | 2 | 0 1 1 3 4 | (5) |
| (6) | 7 7 6 6 5 5 | 2 | 5 8 8 8 | (4) |
| (3) | 2 1 0 | 3 | 1 1 3 | (3) |
| (2) | 7 6 | 3 | 9 | (1) |
| Total | (26) | | | Total (25) |

Key

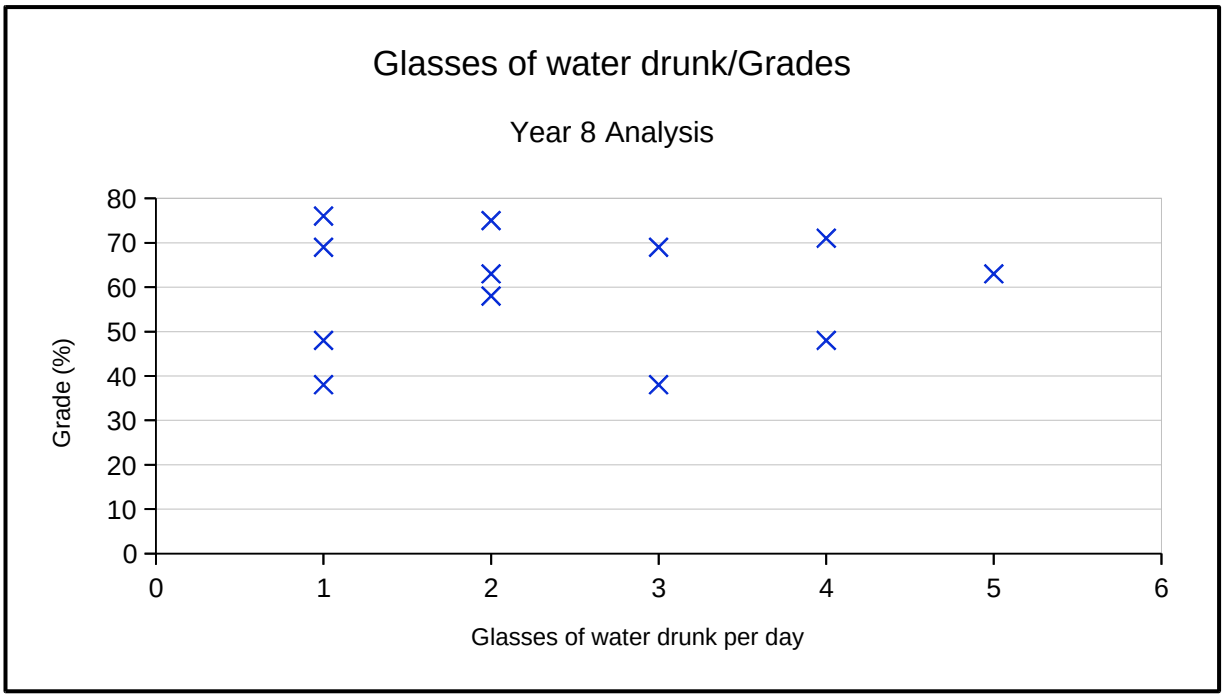
1|5 represents 15

# Can you interpret these diagrams?

9

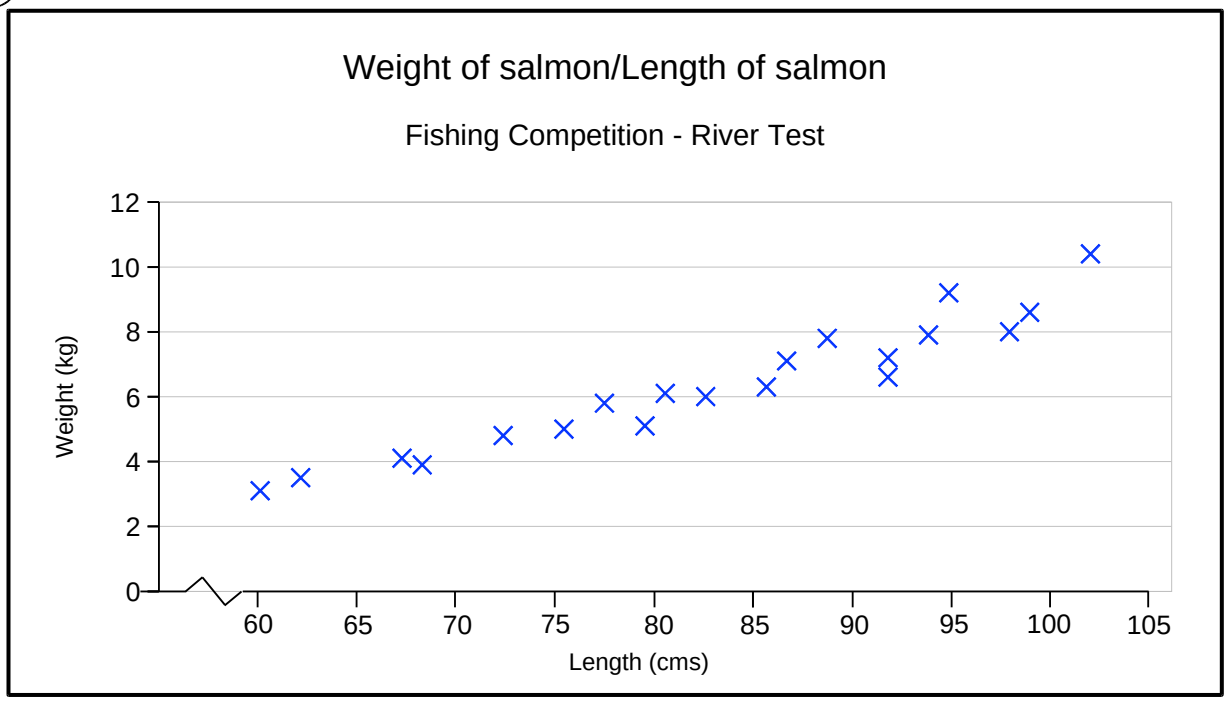



10

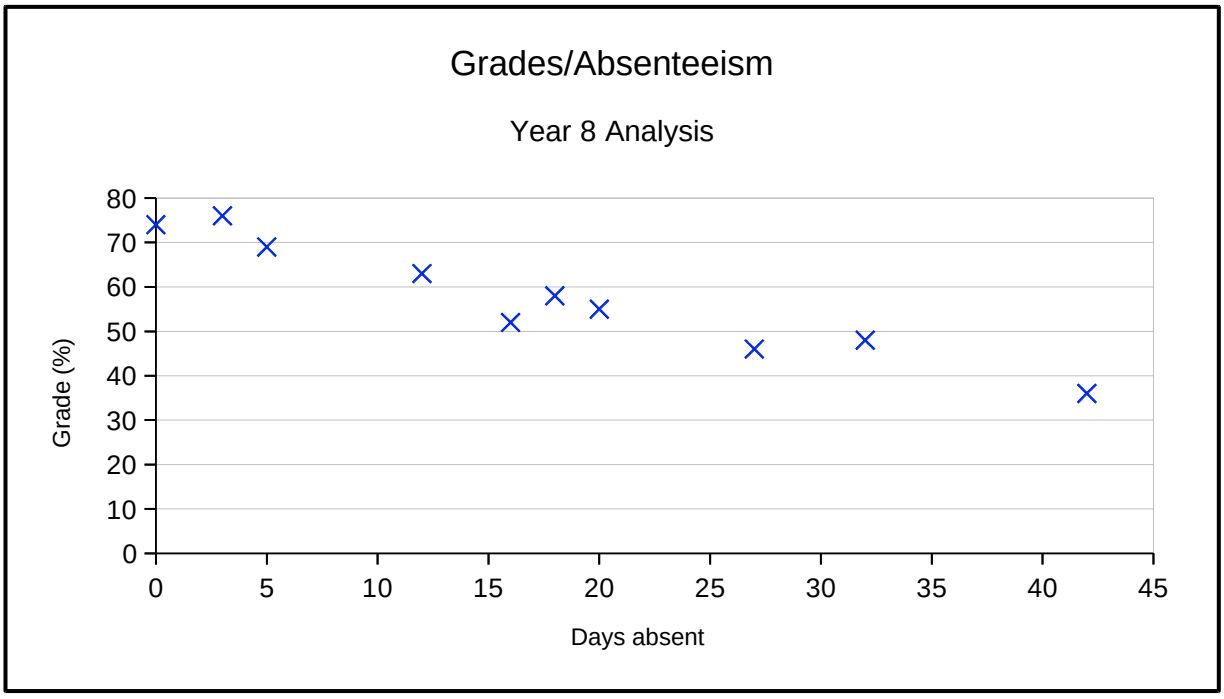


# Can you interpret these diagrams?

11




12



# What happened first?

In each of the following questions you simply have decide which of the events happened first.

| Name | Group | ID |
|---|---|---|
| | Gender | |

| | | A | B |
|---|---|---|---|
| 1 | A) The first steam locomotive began operations<br>B) Charles Darwin published “On the origin of the species” | | |
| 2 | A) Alfred Nobel invented dynamite<br>B) The cardboard box was invented | | |
| 3 | A) Herman Melville's book, “Moby Dick”, was published<br>B) Jane Austen's book, “Pride and Prejudice”, was published | | |
| 4 | A) The first international football match was played<br>B) The first FA Cup final took place | | |
| 5 | A) Blue jeans invented<br>B) Thomas Edison tested his first light bulb | | |
| 6 | A) Robert Louis Stevenson's “Treasure Island” is published.<br>B) Lewis Carroll publishes “Alice's Adventures in Wonderland” | | |
| 7 | A) The first FIFA World Cup<br>B) The first Olympic Games | | |
| 8 | A) Soviet Union's Vostok 1 space mission<br>B) Cuban missile crisis | | |
| 9 | A) Chernobyl disaster<br>B) Fall of the Berlin Wall | | |
| 10 | A) Barack Obama became President of the USA<br>B) The launch of the iPhone | | |
| 11 | A) The death of Nelson Mandela<br>B) The death of Margaret Thatcher | | |
| 12 | A) Donald Trump is elected President of the US<br>B) Britain votes to leave the EU in a referendum | | |
| 13 | A) Princess Eugenie and Jack Brooksbank get married<br>B) Meghan Markle marries Prince Harry | | |
| 14 | A) Sinking of the Titanic<br>B) Suffragette Emily Davison is killed by the King's horse | | |
| 15 | A) Angelique Kerber won the 2018 Ladies title at Wimbledon<br>B) Novak Djokovic won the 2018 Men's title at Wimbledon | | |

# Are girls simply “smarter” than boys?



Sarah

Of course they are. My mum is super clever.

Well Grandad once appeared on University Challenge, so he must have been super smart.



Matthew



Alice

What we need to do is look at some real data before we draw any conclusions.

1

Collect the data from the “What happened first?” quiz and decide how to represent the girls' and boys' data in a statistical diagram.



Jon

We could use a stem and leaf plot.

Or we could draw two dot plots.



Amber

**The raw data**

8Z Scores

Girls scores:

11 6 5 4 5 7 7 7

6 7 8 9 7 7 9 10

Boys scores:

8 9 7 6 5 7 12

9 6 3 8 7 4 12

**The sorted data**

8Z Scores (sorted)

Girls scores:

4 5 5 6 6 7 7 7 7 7 7 8 9 9 10 11

Boys scores:

3 4 5 6 6 7 7 7 8 8 9 9 12 12

# Representing the data

Are girls simply “smarter” than boys?

What happened first? - The Results

| Girls | | | Boys | |
|---|---|---|---|---|
| ( 1 ) | 4 | 0 | 3 4 | ( 2 ) |
| (13) | 9 9 8 7 7 7 7 7 7 6 6 5 5 | 0 | 5 6 6 7 7 7 8 8 9 9 | (10) |
| ( 2 ) | 1 0 | 1 | 2 2 | ( 2 ) |
| (16) | Total | | | (14) |

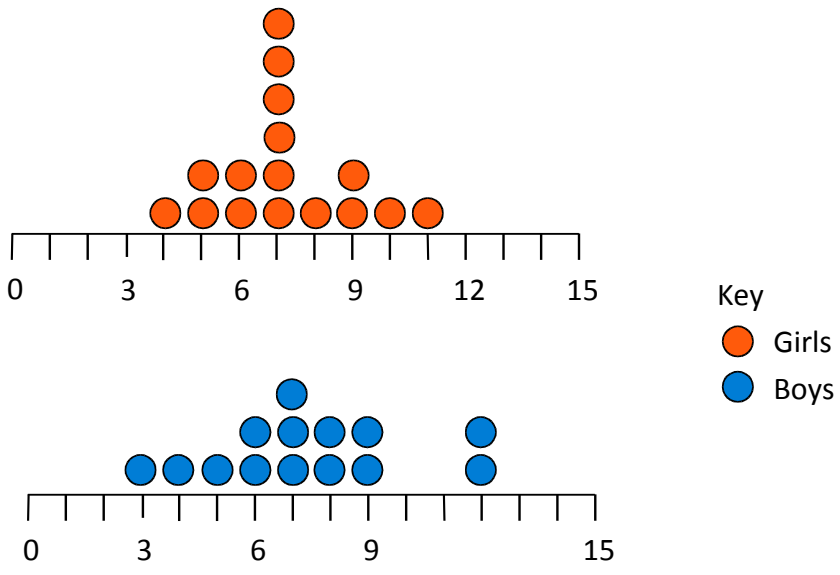
Total

Key

1|2 represents 12

Are girls simply smarter” than boys?

What happened first? - The Results




2

Look at your diagrams. How would you use these to answer the question, “Are girls simply “smarter” than boys?”

# "But on average who did better?"

In the first part of this unit we focused on building up a picture of our data by representing it graphically. This is a good way of getting an impression of the spread of the data and drawing some initial conclusions.

In this next section we begin to "crunch the numbers" which means summarising the data numerically.

We begin by considering how to represent a set of data by a single number, a number that can be used as a representative for all of the data or one that "typifies" the data. This number is generally known as the **average value**.

But there are three different ways of measuring the "average value" of a dataset.

3

Do you remember the three different averages that you have already met? Can you explain what each one actually measures?



Evie

One type of average if the mode. The mode represents the ...

There is also the median. The median represents the ...



Matthew



Sarah

And then there is the mean. The mean represents the ….

There is also the range. What does that measure?



Jon

**A reminder**

When summarising quantitative data you have three different "averages" you might want to consider.

For example, consider this dataset: 8, 3, 4, 7, 6, 5, 5, 8, 11, 2, 7, 8, 9, 4, 6

Always sort the data in ascending order first: 2, 3, 4, 4, 5, 5, 6, 6, 7, 7, 8, 8, 8, 9, 11

The **mode** is the most common result – so the mode is 8.

The **median** is the middle data value when the data are put into ascending order.

In this case the median splits the 15 data values into 2 sets of 7 values. 7 values come before the median and 7 values come after the median.

2, 3, 4, 4, 5, 5, 6, 6, 7, 7, 8, 8, 8, 9, 11

In this case the median is 6.

The **mean** is found by "evening up" all the data values. To calculate the mean, add up all the data values, in this case 93, and divide by the number of data values, in this case 15. The mean is then $93 \div 15 = 6.2$

# Statistics 2a - Summarising data numerically

**A further reminder**

Did you know that the "standing high jump" was an event in the Olympic Games between 1900 – 1912? It is performed in the same way as high jump, with the difference being that the athlete has no run-up and must stand still and jump with both feet together. You will be amazed how high some of these athletes actually jumped! It is still used to measure "springiness" in some sports such as basketball.

Now suppose you were asked to estimate, "On average, how high can a Year 8 basketball player jump from a stationary start?"

You might have a "gut feeling" about the answer but it is much better statistically to collect some real data before trying to answer the question.

At KS3 you need to be familiar with three types of average that are used to "summarise" or "typify" a set of data.

Here are the results of the Yr 8 basketball team's standing high jump competition.



Alice

Here are the standing high jump results, in cm, of the basketball squad.
39, 39, 32, 28, 33, 29, 33, 19, 35, 21, 56, 39, 29, 24, 46, 44
I have sorted these into ascending order to make things easier to see.
19, 21, 24, 28, 29, 29, 32, 33, 33, 35, 39, 39, 39, 44, 46, 56
How can I summarise my data?

Evie's suggestion



Evie

The mode is the most common answer.
19, 21, 24, 28, 29, 29, 32, 33, 33, 35, 39, 39, 39, 44, 46, 56
So the mode is 39cm.

Matthew's suggestion



Matthew

The median is the middle point in our sorted dataset.
In this case the dataset can be split into 2 equal groups of 8.
19, 21, 24, 28, 29, 29, 32, 33, 33, 35, 39, 39, 39, 44, 46, 56
So the median lies between the middle two entries which are both 33cm.
And so the median is 33cm.

Sarah's suggestion



Sarah

The mean represents "fair shares for all". The total height jumped is the sum of the 16 entries.
19+21+24+28+29+29+32+33+33+35+39+39+39+44+46+ 56 = 546
So to find the mean we share these out equally between the 16 players..
So the mean is 546 ÷ 16 = 34.125cm.

4

Looking the results of the basketball team's standing high jump competition, how would you now answer the question, “On average, how high can a Year 8 basketball play jump from a stationary start?”

**Collecting more data**



Mr T

Do you think that, in general, the boys will be “springier” than the girls?



Jasmine

Definitely going to be the girls. After all we do a lot more dance than the boys!

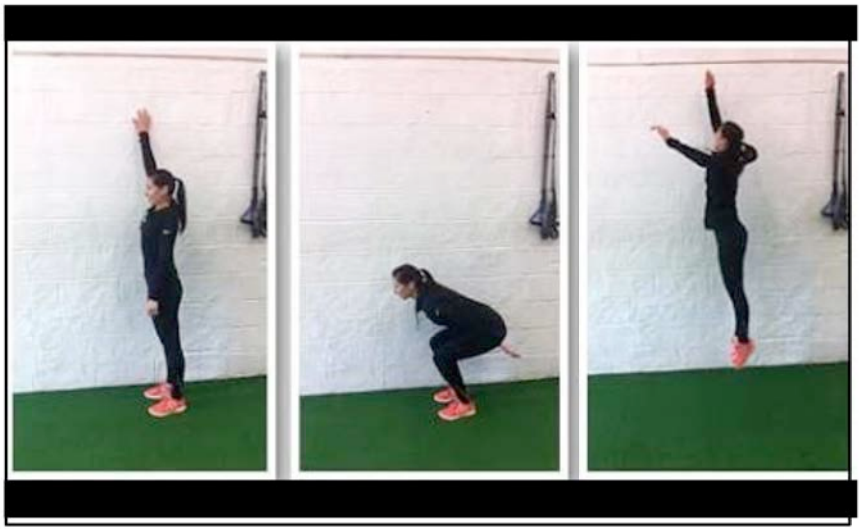
No chance! The boys have stronger leg muscles from playing soccer and rugby.



Mikka

5

Why not collect your own data for a standing high jump competition?
Do you think the boys will be “springier” than the girls?
It would be interesting to find out.



6

Now look back at your group's data for “Are girls simply 'smarter' than boys?” Summarise your data by finding the 3 different averages. Which average would you say is the most appropriate for this question?

# Statistics 2a – Summarising data numerically

**Measuring spread**

Although summarising data by an "average" value can be useful, it tells us nothing about the variability in the data – in other words how spread out the data is.



Miss F

Look at these two data sets. What is the same about them and what is the difference between them?

Data set A: 3, 5, 6, 8, 10, 10, 10, 11, 12, 13

Data set B: 1, 2, 3, 5, 6, 10, 10, 11, 12, 13, 15



Matthew

The mode is 10 for both data sets.

The median is 10 for both data sets.



Sarah



Taro

The total of each data set is 88.

Which means that both data sets have a mean of 8.



Amber



Mikka

The values in data set B are more spread out than those in data set A.

That means the range in data set B is larger than the range in data set A.



Jon

7 Can you explain what Jon means by the range of a data set?



Sarah

The range measures the spread of the data.

It is the difference between the largest and smallest values in the dataset.



Evie



Matthew

The formula for calculating the range is given by:

range = largest value – smallest value = maximum – minimum

**Comparing datasets**

In the programme for the quarter final of the Rugby World Cup 2019, the profile of the players involved showed their masses and heights. This table shows the masses of the two packs of forwards.

| Player | England Mass (kg) | Australia Mass (kg) |
|---|---|---|
| 1 | 121 | 116 |
| 2 | 113 | 110 |
| 3 | 113 | 120 |
| 4 | 115 | 120 |
| 5 | 115 | 119 |
| 6 | 106 | 115 |
| 7 | 103 | 101 |
| 8 | 130 | 110 |

8 What measures would you use to summarise the masses of each pack?

Amber's working



Amber

Firstly I am going to look at the different types of average.
Both data sets are bimodal. For England the modes are 113kg and 115kg.
For Australia the modes are 110 and 120. So not much help there.
I then put the masses in ascending order;
England: 103, 106, 113, 113, 115, 115, 121, 130
Australia: 101, 110, 110, 115, 116, 119, 120, 120
The median for England is ~~114kg.~~ The median for Australia is 115.5kg.
So, using the median, on average, the Australian pack is slightly heavier.
The sum of all of the masses for England is 916kg, so the mean is 114.5kg.
The sum of all of the masses for Australia is 911kg, so the mean is 113.9kg.
So, using the mean, on average, England's pack is slightly heavier.
The range of the England team's masses is 130 – 103 = 27kg.
The range of the Australian team's masses is 120 – 101 = 19kg.
So the masses of England's pack are more spread out than the masses of the Australian pack.
That means there is a greater variation in the masses of the England team.

# Statistics 2a – Summarising data numerically

**Fitness check**

The table below gives you the heights, in cm, of the forwards in the same game.

| Player | England Height (cm) | Australia Height (cm) |
|---|---|---|
| 1 | 175 | 187 |
| 2 | 183 | 178 |
| 3 | 183 | 182 |
| 4 | 193 | 208 |
| 5 | 201 | 202 |
| 6 | 185 | 184 |
| 7 | 186 | 182 |
| 8 | 188 | 195 |

9

Summarise the data for each team. Compare and contrast their results.
Devise some sorting of ranking system for the teams based on height.

**Puzzle corner**

1. Find the mean, mode, median and range for each of these data sets:
   a) 1, 1, 2, 2, 3
   b) 1, 1, 2, 2, 3, 5
   c) 2, 4, 6, 8, 10, 12
   d) 0, 0, 0, 1, 1, 2, 2, 3, 4, 5

2. Look at this data set: 7, 6, 4, 12, ?, 9.
   a) If the mean of this data set is 8, what is the missing number?
   b) What is the missing number if the mean is 9?

3. A vinyl record collector bought 3 records at a sale with a mean price of £3.45 each. The following day, he bought 4 more records with a mean price of £5.20 each. What was the mean price of the 7 records?

4. There are 4 children in a family with a mean age of 9 years. How old might the children be?

5. Find a set of 3 positive integers that have a mean of 6 and a range of 8. Can you find more than one set?

6. Find a set of 5 numbers that have a mean of 5, a median of 5 and a range of 8. Can you find more than one set?

# Do tall people make the best high jumpers?






Alice

I noticed at the World Championship that all the high jump competitors were very tall.
So I think there is a connection between your height and the height you can jump.



Mr T

Earlier in this unit you collected data about your group's standing jump distance.
Now also record everyone's height without shoes.
In this section we will check out Alice's idea to see if there is a connection between the two different variables.

10 How can we check to see if Alice is correct in her thinking?



Matthew

We could draw a scatter graph of height and standing jump distance and see if there a general pattern in the data.

We could see if the graph shows any correlation between height and your standing jump distance.



Evie

11 What do you expect the graph to look like?

# Do tall people make the best high jumpers?

Record the data for your group in a table. For each student you need their height in cm and their standing high jump distance, also in cm.

**Choosing the range of values for your axes**

Now that you have a record of all the data, you need to decide on the range of values for each of your axes. In this case there is little point starting at the origin.

For example, look at the data for the pupils in 8Z.

For height, the minimum value is 140cm and the maximum value 165cm.

So the height axis will need to cover 130cm to 170cm

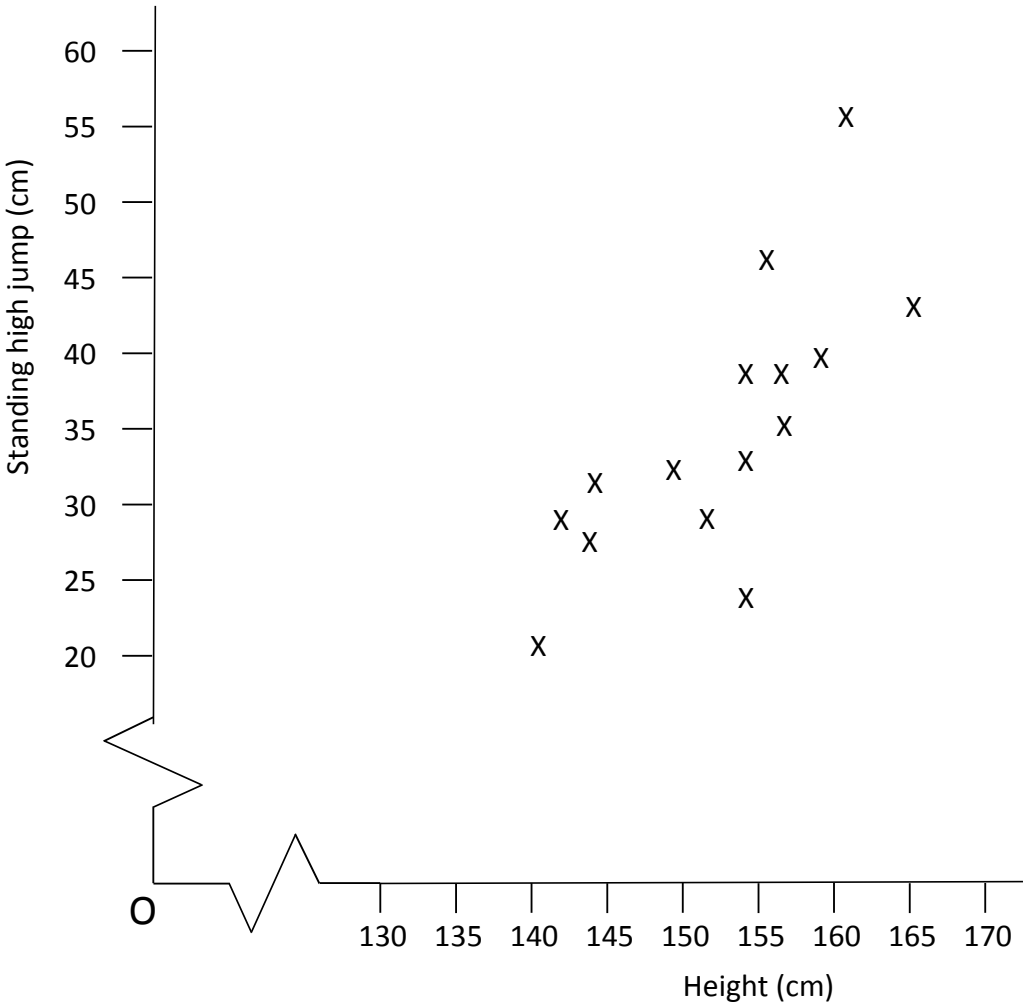
For the standing high jump, the minimum distance is 21cm and the maximum value is 56cm.

So the standing high jump axis will go from 20cm to 60cm.

| 8Z Data | | |
|---|---|---|
| Pupil | Height (cm) | Standing high jump (cm) |
| A | 157 | 35 |
| B | 154 | 39 |
| C | 144 | 32 |
| D | 148 | 28 |
| E | 149 | 33 |
| F | 142 | 29 |
| G | 154 | 33 |
| H | 158 | 40 |
| I | 140 | 21 |
| J | 162 | 56 |
| K | 157 | 39 |
| L | 142 | 29 |
| M | 154 | 24 |
| N | 158 | 46 |
| 0 | 165 | 44 |

# Do tall people make the best high jumpers?

**Drawing the axes and plotting the points**




11 What does this scattergraph show you?



Evie

It shows you that, in general, as the height increases, so does the standing high jump distance.

The graph also shows that as height decreases so does the standing high jump distance.

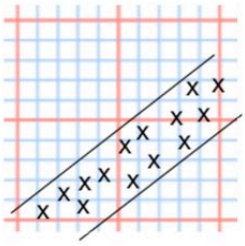


Jon

# Statistics 2a – Making connections

**A reminder and some new terminology**

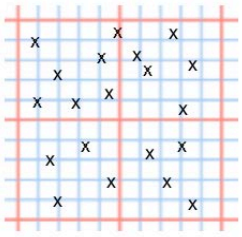
You can tell if there is a connection between the variables by looking at the shape of your scatter plot.



General going upwards.

Both variables increase together.

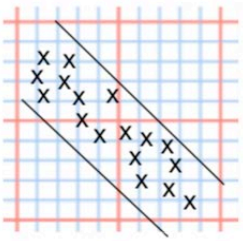
This is known as **positive correlation**



Generally scattered.

No relationship.

This means there is **no correlation**

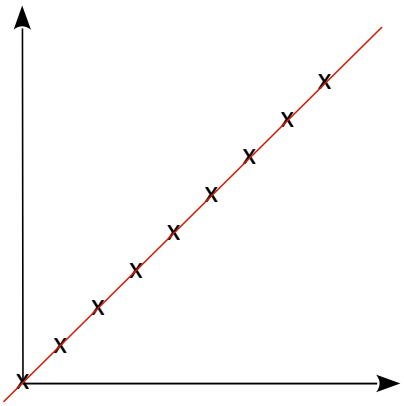


Generally going down.

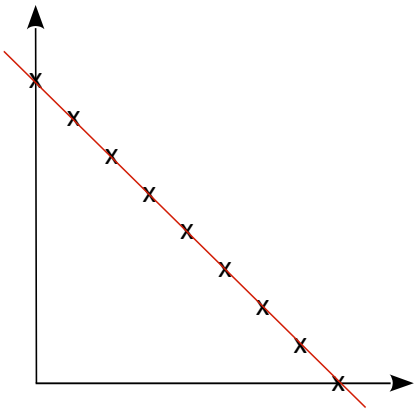
As one variable increases the other decreases.

This is known as **negative correlation**

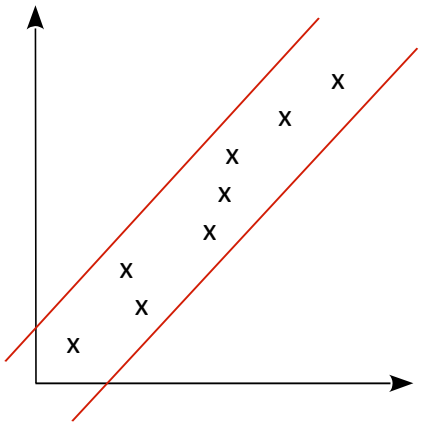
**More terminology**



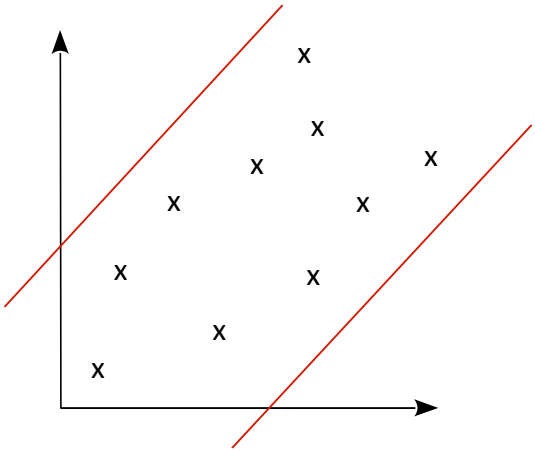
Perfect positive correlation
(Points in a perfect straight line - upwards)



Perfect negative correlation
(Points in a perfect straight line - downwards)



Strong positive correlation
(Points generally upwards, tightly grouped)



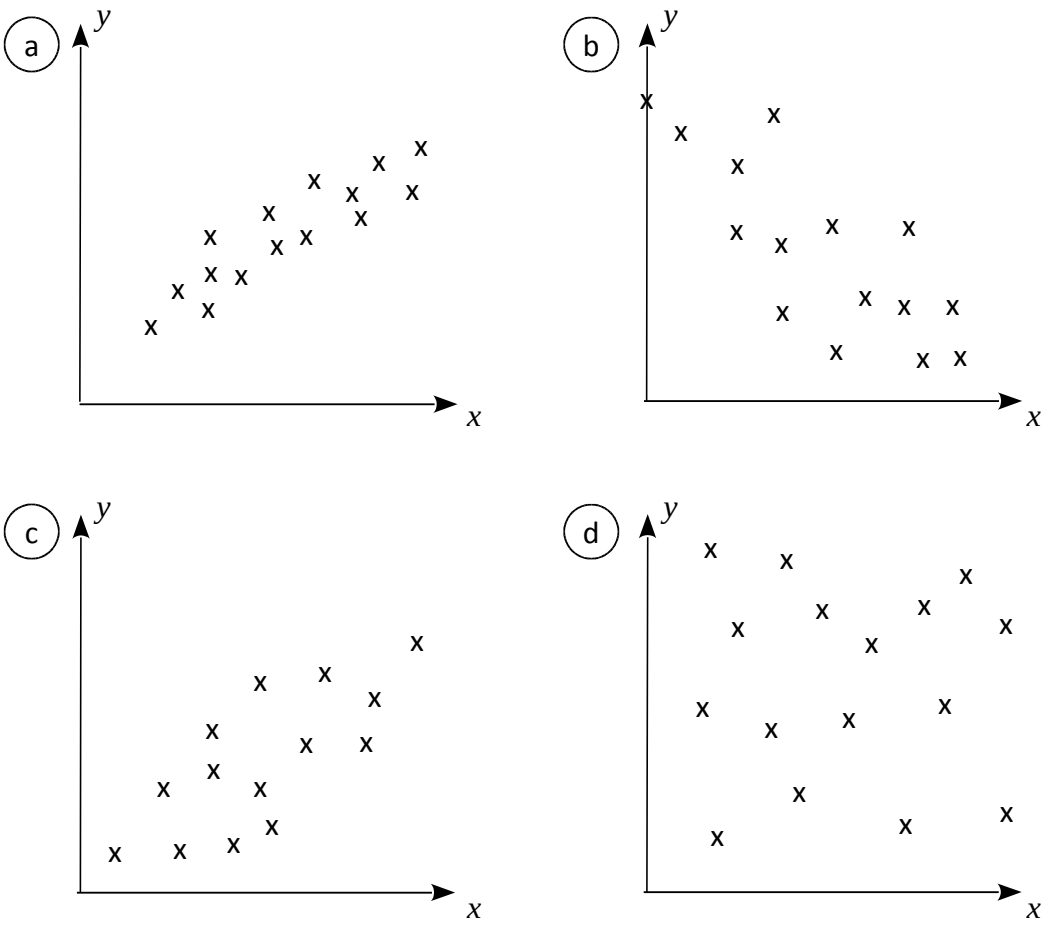
Weak positive correlation
(Points generally upwards, loosely grouped)

# Statistics 2a – Making connections

**Some examples**

1. The mass of a £2 coin is 12g.
   a) What would be the mass of a) four £2 coins b) nine £2 coins c) fifteen £2 coins?
   b) If you plotted your results on a scatter graph, what would you expect to see?
   c) How would you describe the correlation shown on the graph?

2. What phrase best describes the correlation in each of these scatter graphs.




3. The value of a new car goes down every year. This is called depreciation. The table below shows the value of a medium sized family car as it gets older.

| Age of car (in years) ( $x$ - axis) | 0 | 1 | 2 | 3 | 5 | 8 | 10 |
|---|---|---|---|---|---|---|---|
| Value (in pounds) ($y$ - axis) | £20K | £15K | £12K | £10K | £6 | £2.5K | £1.5K |

   a) What correlation do you expect to see if you plot distance covered against fuel remaining?
   b) Plot a graph of your results and see if you were correct.

# Statistics 2a – More questions

This table shows the maximum and minimum temperatures of two seaside towns in the UK for the first 14 days in June 2019.

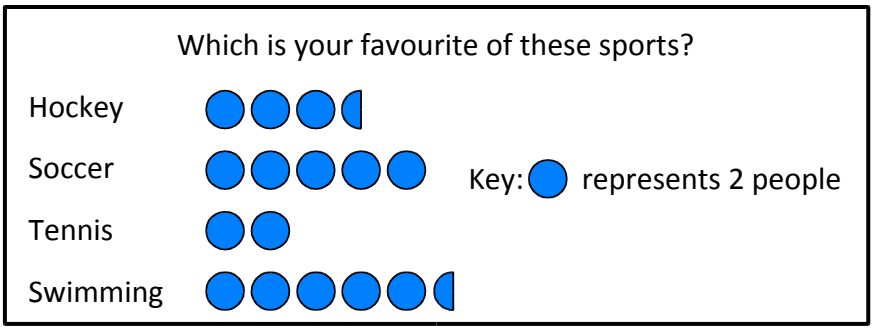
| **Whitby** | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Max °C | 20 | 17 | 14 | 16 | 22 | 21 | 18 | 17 | 19 | 14 | 12 | 13 | 14 | 16 |
| Min °C | 11 | 9 | 9 | 9 | 12 | 15 | 12 | 11 | 8 | 9 | 10 | 10 | 10 | 10 |

| **Brighton** | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Max °C | 25 | 24 | 18 | 16 | 17 | 17 | 17 | 17 | 17 | 13 | 18 | 15 | 15 | 17 |
| Min °C | 13 | 11 | 9 | 11 | 9 | 10 | 10 | 10 | 7 | 10 | 10 | 11 | 11 | 12 |

1. Summarise the data for each town.
2. What does the summary data suggest?
3. Which average would you say best summarises the data? Explain your reasons.
4. Plot a scatter graph of maximum temperature ($y$-axis) against minimum temperature ($x$-axis) for each town.
5. What do these graphs tell you?
6. Plot a scatter graph of maximum temperature for Brighton ($y$-axis) against maximum temperature for Whitby ($x$-axis).
7. What does this graph tell you?
8. Do the same for the minimum temperatures.
9. What does this graph tell you?

# Statistics 2a Descriptive statistics – Mastery questions

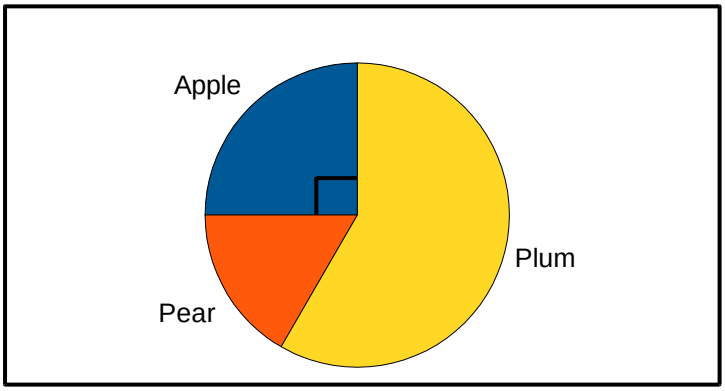
1. Look at this pictogram.




Which of the following statements is incorrect?

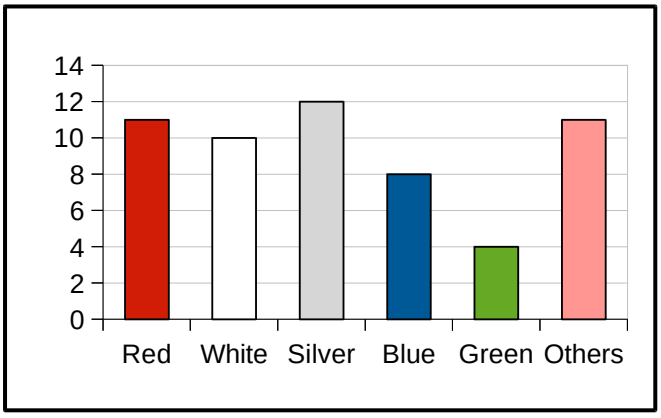
| | | | |
|---|---|---|---|
| A | Swimming is the most popular sport | B | 2 people chose tennis |
| C | Tennis is the least popular sport | D | 7 people chose hockey |

2. This pie chart shows the distribution of fruit trees in an orchard. 48 trees were planted. If $\frac{1}{6}$ of them are pear trees, how many plum trees are there?




| A | B | C | D |
|---|---|---|---|
| 12 | 18 | 28 | 30 |

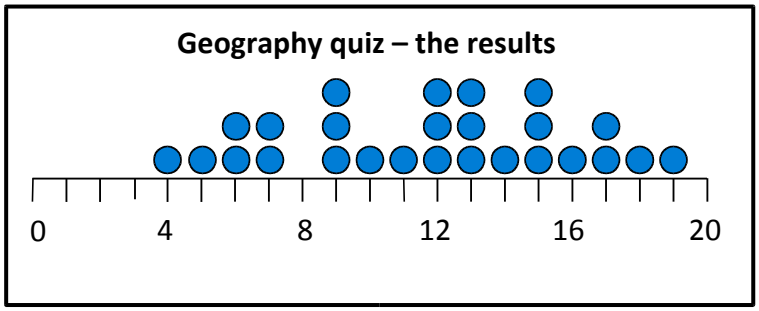
3. This bar chart shows the number of cars by colour in the car park yesterday. How many cars were in the car park?




| A | B | C | D |
|---|---|---|---|
| 6 | 12 | 55 | 56 |

# Statistics 3a Mastery Questions

4. Look at this dotplot showing the scores in a geography quiz. How many pupils entered the quiz?




| A | B | C | D |
|---|---|---|---|
| 16 | 24 | 26 | 28 |

5. Look at this stem and leaf plot. What is the difference between the highest and the lowest scores?

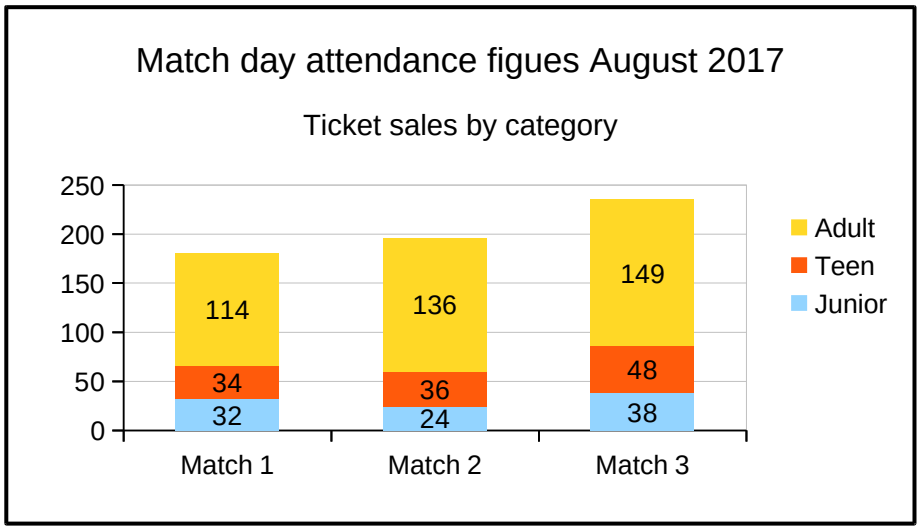
**8Z Geography quiz - scores**

| | | |
|---|---|---|
| 0 | 3 4 4 | (3) |
| 0 | 6 7 8 9 | (4) |
| 1 | 0 0 0 0 1 2 2 3 3 4 4 4 | (12) |
| 1 | 5 5 6 6 6 6 7 7 8 | (9) |
| | Count | (28) |

Key 1|5 represents 15 correct

| A | B | C | D |
|---|---|---|---|
| 5 | 15 | 18 | 28 |

6. This stacked bar charts shows the sales of tickets for 3 hockey matches.

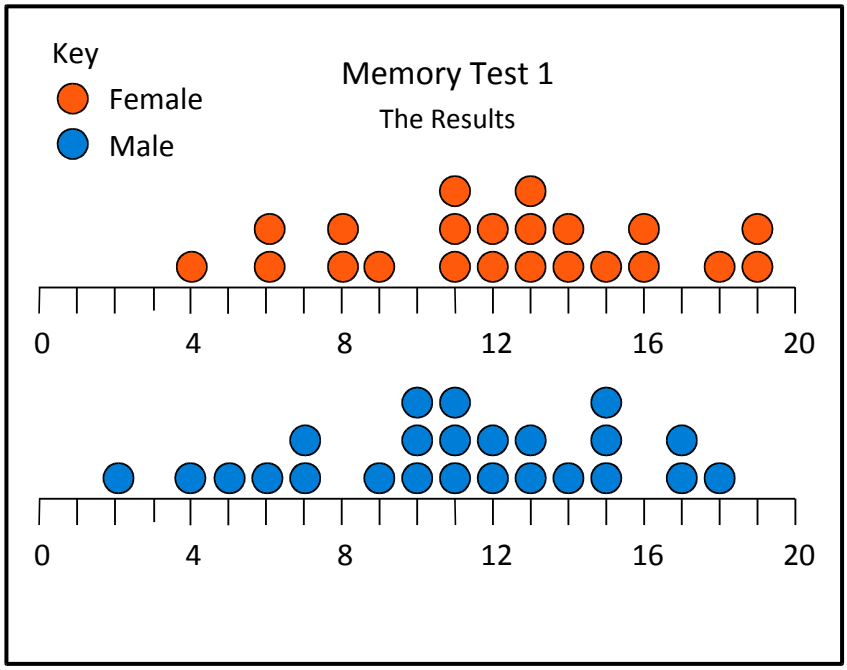



What is the difference in ticket sales between Match 3 and Match 1?

| A | B | C | D |
|---|---|---|---|
| 35 | 180 | 55 | 235 |

# Statistics 2a Mastery Questions

7. These two dotplots show the results of a memory test for some pupils in Year 8. What is the difference between the lowest female score and the highest male score?




| A | B | C | D |
|---|---|---|---|
| 2 | 14 | 17 | 19 |

8. This back to back stem and leaf diagram shows the results of a second memory test for some pupils in Year 8. What is the sum of the 4th highest female score and the 2nd highest male score?

Memory Test 2

The Results

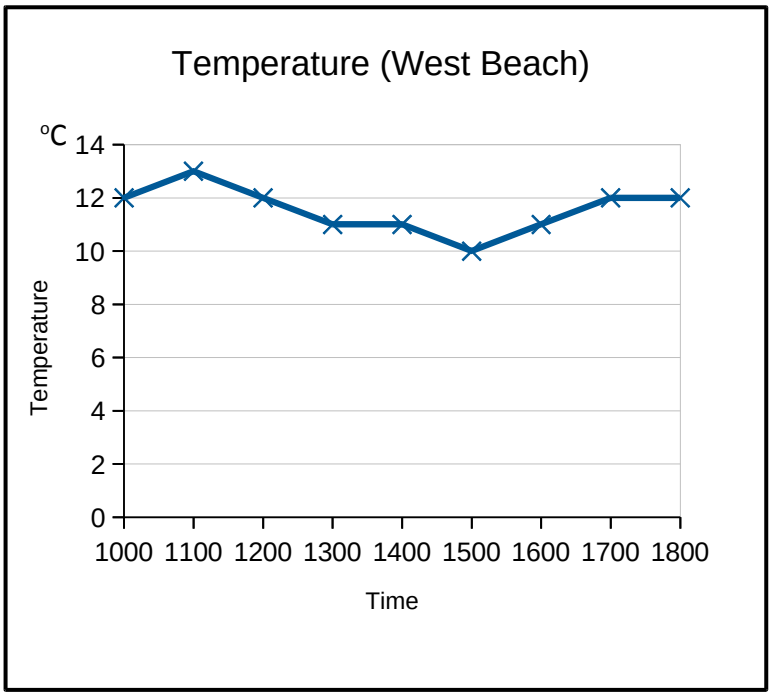
| Female | | | Male | |
|---|---|---|---|---|
| (2) | 7 5 | 0 | 8 | (1) |
| (3) | 4 3 1 | 1 | 0 3 4 4 4 | (5) |
| (5) | 9 9 8 7 5 | 1 | 5 5 6 7 9 | (5) |
| (4) | 4 4 2 0 | 2 | 0 2 2 4 4 4 | (6) |
| (6) | 7 7 6 6 5 5 | 2 | 5 6 8 8 | (4) |
| (2) | 2 1 | 3 | 1 3 4 | (3) |
| (2) | 7 6 | 3 | 5 | (1) |
| Total | (24) | | | Total (25) |

Key

1|5 represents 15

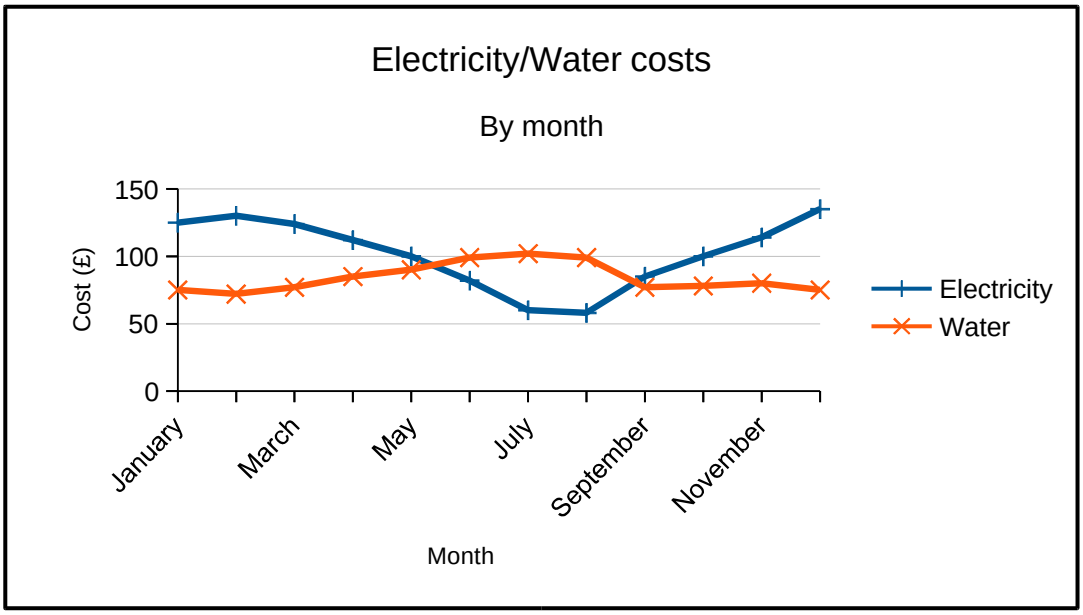
| A | B | C | D |
|---|---|---|---|
| 23 | 62 | 64 | 66 |

9. This graph shows the temperature in a seaside town on a day in October. For how many hours was the temperature below 12°C?




| A | B | C | D |
|---|---|---|---|
| 4 | 5 | 6 | 7 |

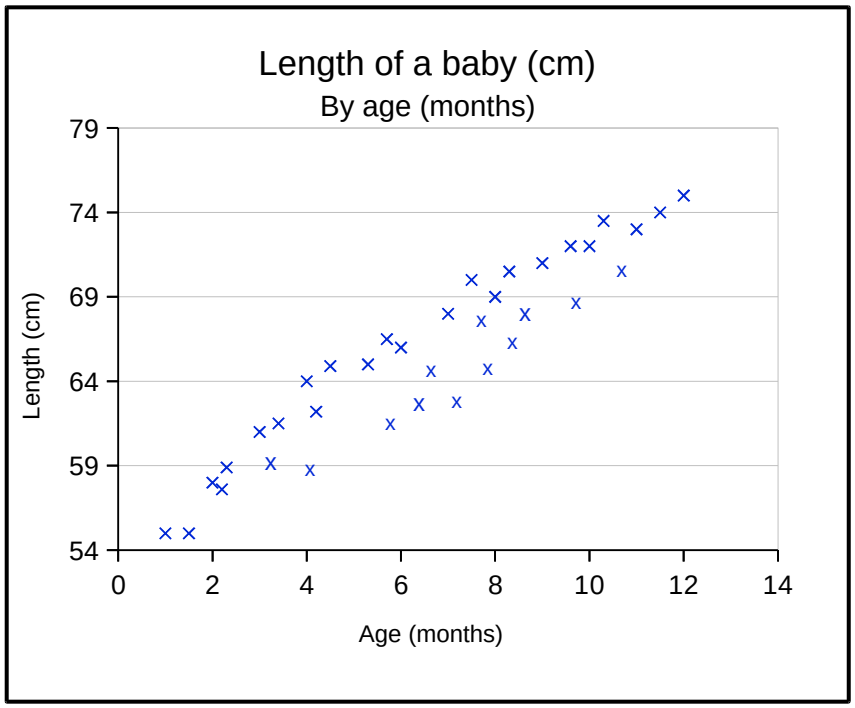
10. These time series graphs shows a household's electricity and water costs over a year.




Which of these statements is false?

| | | | |
|---|---|---|---|
| A | The electricity bill was most expensive in December. | B | From March to July the water bill increased. |
| C | The electricity bill was most expensive in the summer. | D | The water bill was most expensive in the summer. |

11. Which of the phrases best describes the correlation shown below?




| | | | |
|---|---|---|---|
| A | Positive correlation | B | Negative correlation |
| C | Weak negative correlation | D | No correlation |

12. Which of these statements is not an example of negative correlation?

| | | | |
|---|---|---|---|
| A | As you move further out of London, house prices fall. | B | The more money you spend, the less money you save. |
| C | As you grow taller, the length of your arms gets longer. | D | The longer you run, the slower you run. |

13. Five numbers have a mean of 19. The number 13 is added to the dataset. What is the new mean?

| A | B | C | D |
|---|---|---|---|
| 19 | 13 | 16 | 18 |

14. The mean of six numbers is 28. What is the sum of the six numbers?

| A | B | C | D |
|---|---|---|---|
| 168 | 28 | 34 | 128 |

15. What is the mean minimum temperature for the week shown below?

| Day | Mon | Tues | Wed | Thurs | Fri | Sat | Sun |
|---|---|---|---|---|---|---|---|
| Min Temp. | –2.9°C | –1.8°C | –0.9°C | 0°C | –0.7°C | 0.9°C | 1.2°C |

| A | B | C | D |
|---|---|---|---|
| –4.2°C | –0.7°C | –0.6°C | 0.0°C |

16. What is the range in the minimum temperature for the data given Q15?

| A | B | C | D |
|---|---|---|---|
| –4.1°C | –1.7°C | 1.7°C | 4.1°C |

17. What is the median of this dataset?

2, 3, 3, 5, 7, 8, 9

| A | B | C | D |
|---|---|---|---|
| 3 | 4 | 5 | 6 |

18. What is the median of this dataset?

2, 3, 3, 5, 7, 8, 9, 9

| A | B | C | D |
|---|---|---|---|
| 3 | 4 | 5 | 6 |

19. What is the median of this dataset?

7, 5, 3, 4, 6, 5, 3, 2, 2

| A | B | C | D |
|---|---|---|---|
| 3 | 4 | 5 | 6 |

20. The mean of three numbers is 13. Two of the numbers are 15. What is the third number?

| A | B | C | D |
|---|---|---|---|
| 13 | 9 | 10 | 14 |

21. The London Eye is a big wheel with pods to carry passengers. It takes 30 minutes for the wheel to make a complete turn. This table shows the height of a pod above the ground as the wheel turns.

| Time (mins) | 0 | 5 | 10 | 15 | 20 | 25 | 30 |
|---|---|---|---|---|---|---|---|
| Height (m) | 0 | 30 | 100 | 130 | 100 | 30 | 0 |

Represent this data by a suitable line graph.

From your graph, estimate

a) how high the pod is after 12 minutes,

b) when the pod is 65m above the ground.

22. This table shows the times taken in minutes by 8 pupils to complete a number puzzle and a word puzzle. Plot a scatter graph of your results. What does your graph tell you?

| Number Puzzle | 12 | 15 | 16 | 18 | 20 | 21 | 23 | 25 | 30 |
|---|---|---|---|---|---|---|---|---|---|
| Word Puzzle | 25 | 23 | 24 | 22 | 20 | 20 | 19 | 19 | 25 |