GCSE Statistics: Grade 2

Worked solutions

GCSE Statistics practice

1 DISCRETE AND CONTINUOUS DATA

A vet records these four things about each dog she sees.

- the mass of the dog, in kg
- the number of teeth the dog has
- the length of the dog's tail, in cm
- the number of visits the dog has made this year

a. Write down the two things that are discrete data.

b. Explain why the mass of a dog is continuous data.

(3 marks)

a) discrete data is counted

the number of teeth

the number of visits

b) continuous data is measured

Mass can take any value

for example 12.4 kg or 12.43 kg

a) teeth and visits b) measured, any value

2 PRIMARY AND SECONDARY DATA

Kwame wants to find out how the pupils at his school travel to school. He thinks of two ways to get data.

Method A: give a questionnaire to pupils at his school.

Method B: use a table on a government website showing how pupils in England travel to school.

a. Write down the method that gives primary data.

b. Give one advantage of using secondary data.

c. Give one reason why the data from Method B may not be suitable for Kwame.

(3 marks)

a) primary data is data you collect yourself

Method A

b)

It has already been collected

so it is quicker and cheaper to get

c)

It is about pupils in all of England

His school may be different

Free for classroom and home use: print, photocopy and share. Not for resale or re-hosting.

a) Method A b) quicker to get c) not about his school

3 **MEAN FROM A LIST**

Here are the numbers of text messages sent by six friends in one day.

14 9 22 17 11 23

a. Work out the mean number of text messages.

b. A seventh friend sent 30 text messages on the same day.
Work out the mean for all seven friends.

(4 marks)

a) add the values, then divide by how many there are

$14 + 9 + 22 + 17 + 11 + 23 = 96$

$96 \div 6 = 16$

mean = 16 text messages

b) new total

$96 + 30 = 126$

$126 \div 7 = 18$

a) 16 b) 18

4 **TWO-WAY TABLES**

60 pupils in Year 9 each choose one activity for a school trip. The two-way table shows some information about their choices.

	Climbing	Kayaking	Archery	Total
Boys	12		7	28
Girls		14		
Total	20			60

a. Complete the two-way table.

b. Write down the activity that was chosen by the most girls.

(4 marks)

a) boys kayaking

$28 - 12 - 7 = 9$

girls climbing

$20 - 12 = 8$

girls total

$60 - 28 = 32$

girls archery

$32 - 8 - 14 = 10$

kayaking total

$9 + 14 = 23$

Free for classroom and home use: print, photocopy and share. Not for resale or re-hosting.

archery total

$7 + 10 = 17$

check the totals

$20 + 23 + 17 = 60$

b) girls row is 8, 14, 10

14 is the highest, so kayaking

a) 9, 8, 10, 32, 23, 17 b) Kayaking

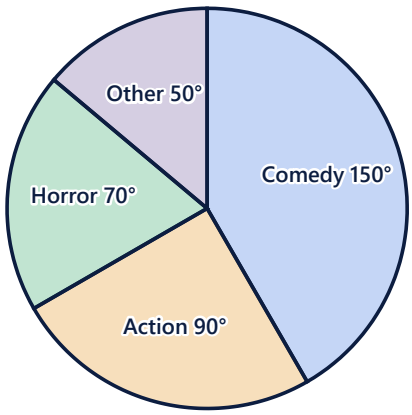
5 **READING PIE CHARTS**

72 people were asked to name their favourite type of film. The pie chart shows the results.

a. Write down the type of film that is the mode.

b. What fraction of the people chose Action?

c. Work out the number of people who chose Horror.



(4 marks)

a) the mode has the biggest sector

Comedy

b)

$\frac{90}{360} = \frac{1}{4}$

One quarter chose Action

c) angle for each person

$360 \div 72 = 5^\circ$

Horror is 70°

$70 \div 5 = 14$

a) Comedy b) $\frac{1}{4}$ c) 14 people

Free for classroom and home use: print, photocopy and share. Not for resale or re-hosting.

6 **LINE GRAPHS**

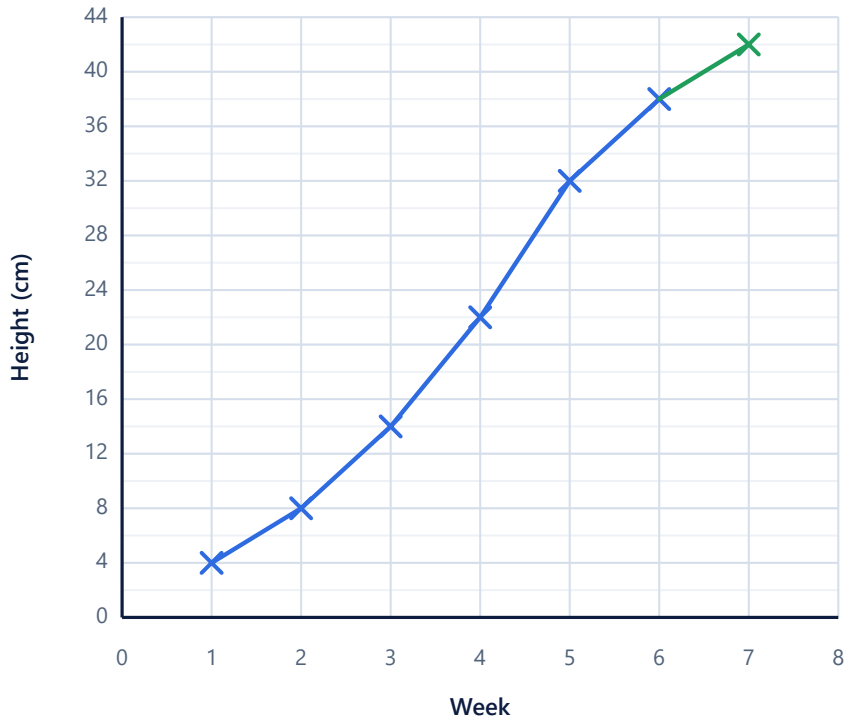
Farid measures the height of a sunflower at the end of each week. The line graph shows his results for the first 6 weeks.

a. Write down the height of the sunflower at the end of week 3.

b. Between which two weeks did the sunflower grow the most?

c. At the end of week 7 the height was 42 cm. Plot this point and complete the line graph.

d. Describe how the growth of the sunflower changed after week 5.



(4 marks)

a) up from week 3, then across

14 cm

b) Look for the steepest part of the line

32 - 22 = 10

It grew 10 cm from week 4 to week 5

c)

Plot a cross at (7, 42)

Join it to (6, 38) with a ruler

d)

After week 5 the line is less steep

It grew 6 cm, then only 4 cm

The growth slowed down

a) 14 cm b) week 4 to week 5 c) (7, 42) d) it slowed down

Free for classroom and home use: print, photocopy and share. Not for resale or re-hosting.

7 **PROBABILITY OF A SINGLE EVENT**

A jar contains 20 sweets. 8 are strawberry, 7 are lemon and 5 are mint.

Aisha takes one sweet from the jar at random.

a. Write down the probability that the sweet is lemon.

b. Work out the probability that the sweet is **not** mint. Give your answer as a fraction in its simplest form.

c. Write down the probability that the sweet is orange.

(4 marks)

a) 7 lemon out of 20 sweets

$\frac{7}{20}$

b) sweets that are not mint

$20 - 5 = 15$

$\frac{15}{20} = \frac{3}{4}$

c)

There are no orange sweets

It is impossible, so the probability is 0

a) $\frac{7}{20}$ b) $\frac{3}{4}$ c) 0

Free for classroom and home use: print, photocopy and share. Not for resale or re-hosting.

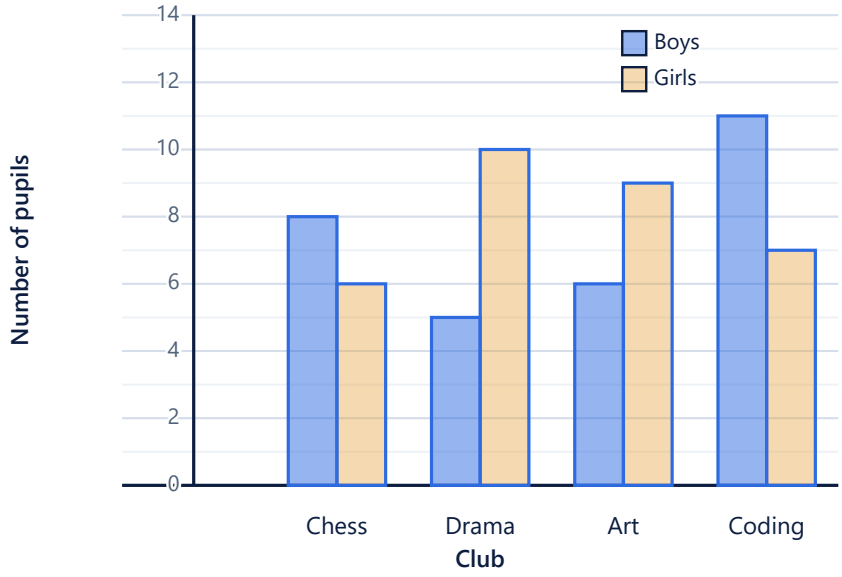
8 DUAL AND COMPOSITE BAR CHARTS

The dual bar chart shows the numbers of boys and girls who go to four after-school clubs.

a. How many girls go to Drama?

b. Write down the two clubs that have more boys than girls.

c. Sami says, "In total, more boys than girls go to these clubs."
Is Sami correct? You must show your working.



(4 marks)

a) girls bar for Drama

10 girls

b) clubs where the boys bar is taller

Chess has 8 boys and 6 girls

Coding has 11 boys and 7 girls

c) total boys

$8 + 5 + 6 + 11 = 30$

total girls

$6 + 10 + 9 + 7 = 32$

$32 > 30$, so there are more girls

Sami is not correct

a) 10 b) Chess and Coding c) No, 30 boys, 32 girls

Free for classroom and home use: print, photocopy and share. Not for resale or re-hosting.