GCSE Statistics: Grade 3

Foundation | 8 questions, 32 marks

GCSE Statistics practice

Name: _____ **Date:** _____ **Score:** _____ **/ 32**

1 **POPULATION, CENSUS AND SAMPLE**

A head teacher wants to find out what the 900 pupils at her school think about school lunches. She asks 50 of the pupils.

a. Write down the population for this investigation.

b. Is the head teacher taking a census or a sample?

c. Give one advantage of asking 50 pupils instead of all 900 pupils.

d. Give one disadvantage of asking only 50 pupils.

(4 marks)

2 **WRITING A HYPOTHESIS**

Leila thinks that older pupils spend more time on homework. She is going to investigate the pupils in Year 7 and Year 11 at her school.

a. Write down a suitable hypothesis for Leila to test.

b. Write down two pieces of data Leila needs to collect from each pupil.

(3 marks)

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3 QUESTIONNAIRES AND BIASED QUESTIONS

Dan writes a questionnaire about a sports centre. Here are two of his questions.

Question 1 Do you agree that the new sports centre is brilliant?

☐ Yes ☐ No

Question 2 How many times do you visit the sports centre?

☐ 1 to 3 ☐ 3 to 5 ☐ 5 to 7

a. Write down one thing that is wrong with Question 1.

b. Write down two things that are wrong with the response boxes for Question 2.

c. Write a better question for Question 2. Include some response boxes.

(5 marks)

4 STEM AND LEAF DIAGRAMS

The stem and leaf diagram shows the ages, in years, of the members of a walking club.

2	4 7 9
3	1 5 5 8
4	0 2 6 6 6 9
5	3 7

Key: 2 | 4 means 24 years

a. How many members does the club have?

b. Write down the mode.

c. Find the median age.

d. Work out the range of the ages.

(4 marks)

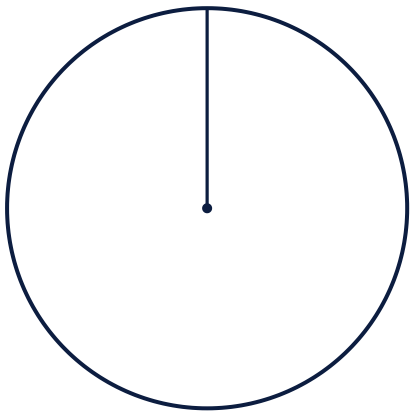
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5 **DRAWING PIE CHARTS**

90 workers at a factory were asked how they travel to work. The table shows the results.

Method of travel	Car	Bus	Train	Walk
Number of workers	40	25	15	10

Draw an accurate pie chart to show this information.



(4 marks)

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6 **SCATTER DIAGRAMS AND CORRELATION**

A kiosk in a park sells hot drinks. The scatter diagram shows the midday temperature and the number of hot drinks sold on each of 8 days.

The table shows the information for two more days.

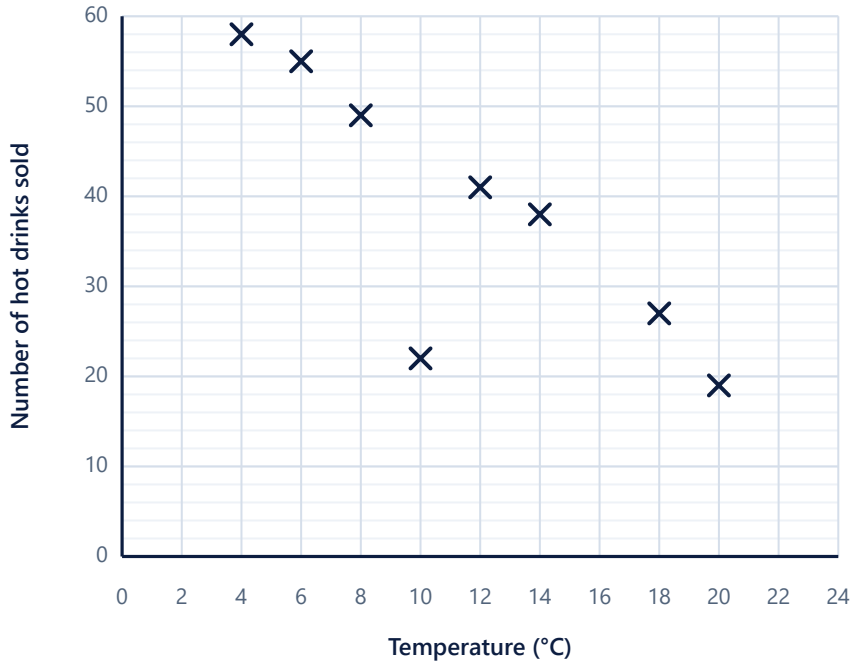
Temperature (°C)	**16**	**22**
Number of hot drinks sold	30	14

a. Plot the information from the table on the scatter diagram.

b. Describe the type of correlation shown.

c. Interpret the correlation in context.

d. On one of the days the kiosk closed early. Write down the temperature on that day. Give a reason for your answer.



(4 marks)

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7 **MEAN FROM A FREQUENCY TABLE**

The table shows the number of goals scored by a hockey team in each of 20 matches.

Number of goals	0	1	2	3	4
Frequency	3	6	5	4	2

a. Work out the mean number of goals scored per match.

b. Write down the mode.

(4 marks)

8 **EXPERIMENTAL PROBABILITY AND EXPECTED FREQUENCY**

Ewa thinks a spinner may be biased. She spins it 40 times. The table shows her results.

Colour	Red	Blue	Green
Frequency	14	10	16

a. Use the results to estimate the probability that the spinner lands on green.

b. Ewa is going to spin the spinner 200 times.
Work out an estimate for the number of times it will land on green.

c. Write down one way Ewa could get a more reliable estimate of the probability.

(4 marks)

End of questions | Total 32 marks

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