

Statistics GCSE**Paper 1**

Edexcel Foundation - 2026

Foundation Tier

Variant 4

1ST0/1F

Instructions

- Write all answers in the spaces provided.
- Answer all questions.
- You must show all your working.
- There may not be enough space to show all your working out.

Information

- This is a practise paper to aid your revision for your exams.
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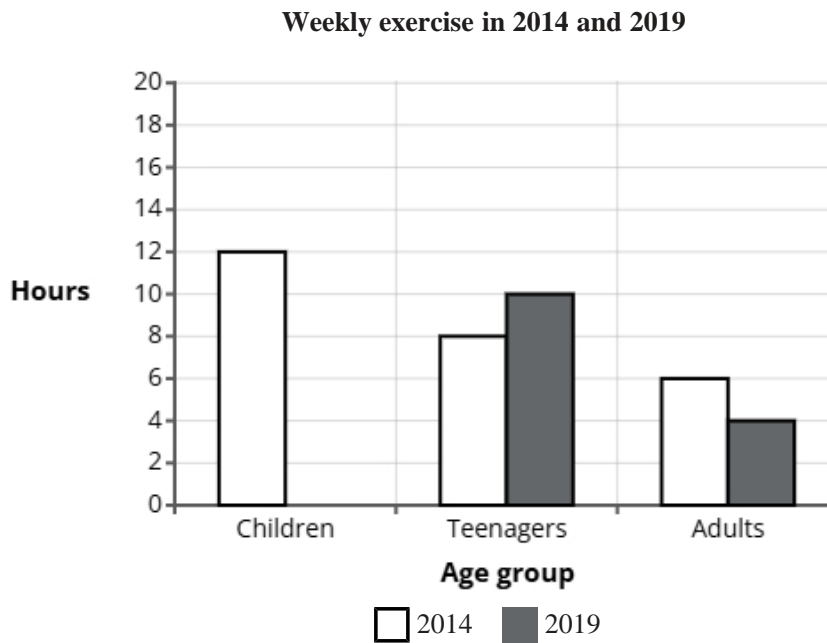
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Advice

- You can get support for all these questions at our website: www.statsgcse.com
- This paper and more are available on our site with questions that change subtly after each attempt.
- Good luck!

- 1 The comparative bar chart compares the average number of hours spent exercising per week by three age groups in 2014 and 2019.



In 2019, children exercised for 14 hours.

- (a) Complete the comparative bar chart for children.

(1 mark)

- (b) Find how many more hours were spend exercising by teenagers than adults in 2014.

(2 marks)

- (c) Compare the the number of hours exercised by children, teenagers and adults in 2014.

(2 marks)

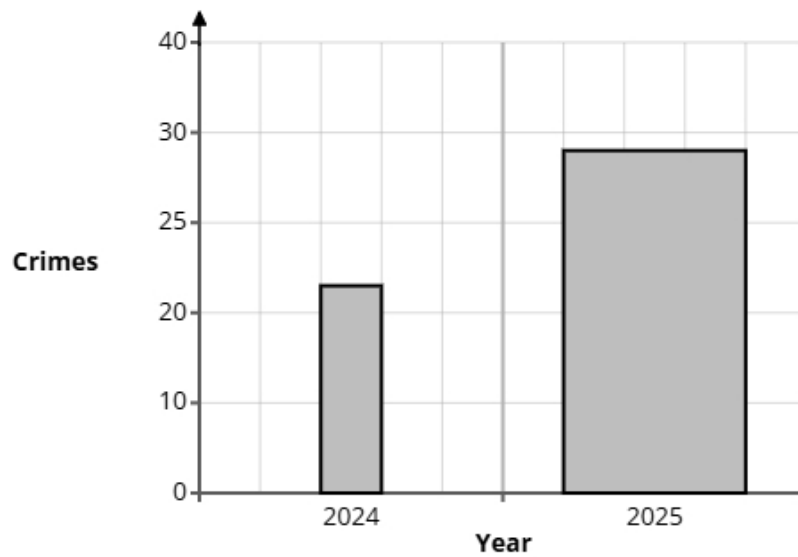
(d) The data displayed in the comparative bar chart is an example of quantitative data.

Explain what is meant by quantitative data.

(1 mark)

2 A local newspaper editor sourced data to compare crime levels in a village in 2024 and 2025.

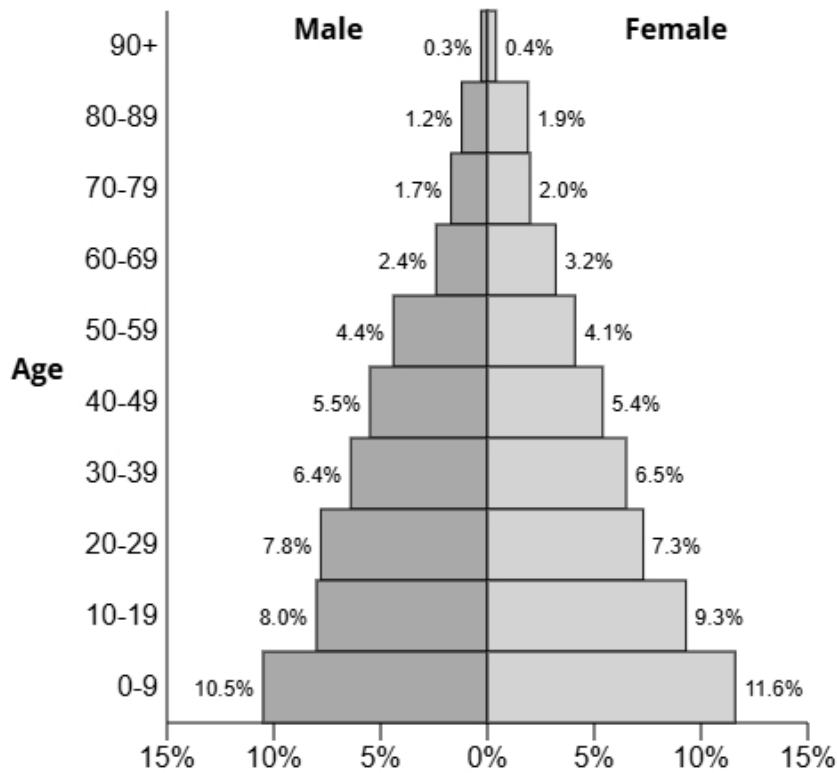
A bar chart is drawn from the information.



State **two** reasons why the bar chart could be misleading.

(2 marks)

3 The population pyramid below shows the percentage of males and females in each age group for the town Marshcombe.



(a) Write down the percentage of females in the age group 20-29.

(1 mark)

_____ %

(b) Find the age group for males that has 6.4% of the population.

(1 mark)

(c) Find the age group that has 17.3% of the population.

(1 mark)

(d) Compare the percentage of the population aged 50-79 between males and females.

(1 mark)

(e) Give a reason why the sum of all the percentages is 99.9% and not 100%.

(1 mark)

4 A hospital is planning to introduce a new appointment booking system.

Sophia wants to carry out a survey to find out what all patients think about the proposed change.

Sophia thinks that she should take a sample rather than a census.

(a) Sophia has decided to use the electoral register as a sampling frame.

State one problem Sophia may have using the electoral register as a sampling frame.

(1 mark)

5 The council leader is reviewing the frequency of a local bus service.

The council wants to collect opinions from residents.

They plan to give a questionnaire to people using the bus service on one weekday and ask them to return it to the bus driver the following day.

(a) Describe the meaning of the term 'simple random sample'.

(1 mark)

(b) Assess the council leader's plan to get the opinions of the residents.

(3 marks)

(c) Here is an open question that the council leader is considering for the questionnaire.

What do you think about the local bus service?

Give one reason why this is not a good question.

(1 mark)

(d) Design a suitable closed question for the council leader to use on her questionnaire so that she can decide how many busses to run per hour on this route.

(2 marks)

(e) When the council leader has designed her questionnaire, she decides to pre-test it by using a pilot survey with a small sample of residents.

Select **two** reasons why she should conduct a pilot survey.

(2 marks)

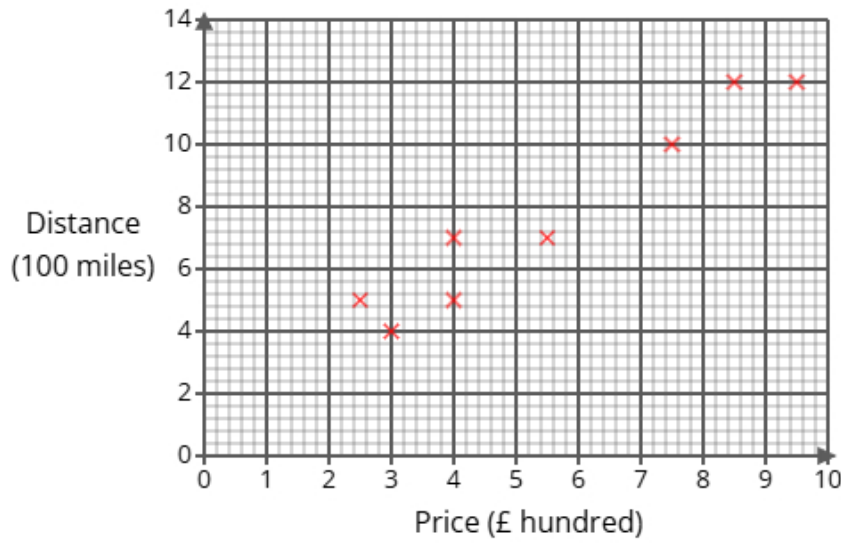
Select **two** boxes.

- A pilot survey will be cheaper than a survey.
- A pilot survey will include more people.
- A pilot survey will test questions are working as intended.
- A pilot survey will give more accurate data.
- A pilot survey will check questions are inoffensive.

6 A health researcher is investigating how much time adults spend walking each week. She plans to ask a sample of 40 adults to record the number of hours they spend walking in one week. Each person will write their total on a form provided. Describe one problem the health researcher might face in the statistical enquiry process due to non-response or unexpected results, and explain how she could address this issue.

(2 marks)

7 Jamie collected data on 11 flights, recording the distance (in hundreds of miles) and the price (in hundreds of pounds) of each flight. He represented his findings in the scatter diagram below.



(a) One of the 11 flights has a price of £550.
For this flight, write down the distance.

(1 mark)

_____ miles

(b) Draw a line of best fit on the scatter diagram.

(1 mark)

(c) Describe and interpret the type of correlation shown by the scatter diagram.

(3 marks)

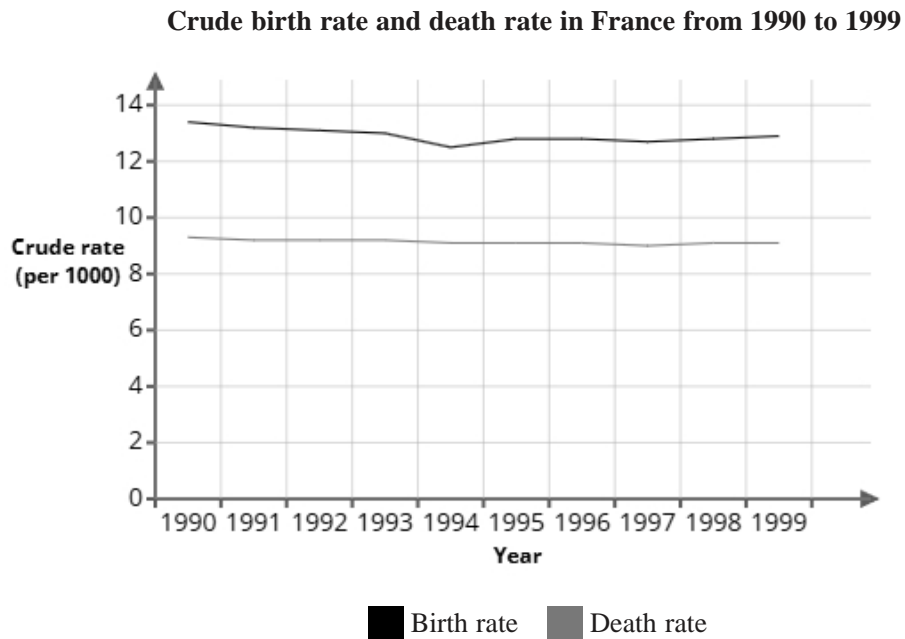
(d) An airline has announced a new route at a price of £2000.

Jamie is planning on using the line of best fit on the scatter diagram to predict the distance of the flight.

Explain whether or not it is appropriate to use the line of best fit for this prediction.

(2 marks)

8 The graph shows the crude birth rate and death rate in France from 1990 to 1999



Liam uses the information in the graph to conclude:

"The total population in France has increased from 1990 to 1999"

(a) Explain how the information in this graph supports Liam's conclusion.

(1 mark)

(b) Give a reason why Liam's conclusion might **not** be correct.

(1 mark)

(c) In 2000, the population of France was 59 934 350.

There were 638 345 recorded births.

Using the formula below, calculate the crude birth rate in 2000.

Give your answer correct to 1 decimal place.

$$\text{crude birth rate} = \frac{\text{number of births} \times 1000}{\text{total population}}$$

(2 marks)

9 Noah investigates the reaction times (in milliseconds) of 120 people taking a driving test.

The times range from 203 ms to 281 ms.

Noah considers using one of the two possible grouped frequency tables for the results, Table A or Table B, shown below.

Table A

Time (t ms)	Frequency
$170 < t \leq 200$	0
$200 < t \leq 230$	31
$230 < t \leq 260$	67
$260 < t \leq 290$	22
$290 < t \leq 310$	0

Table B

Time (t ms)	Frequency
$200 < t \leq 220$	14
$220 < t \leq 240$	40
$240 < t \leq 260$	44
$260 < t \leq 280$	20
$280 < t \leq 300$	2

(a) Give **two** advantages of using grouped data rather than raw data.

(2 marks)

(b) Give **one** disadvantage of using grouped data rather than raw data.

(1 mark)

(c) Noah feels that Table B gives more detail than Table A about the results.

Assess the appropriateness of Noah's claim.

(2 marks)

(d) Noah wants to work out the average reaction times of the 120 people taking a driving test.

He decides to use Table B.

Calculate the average reaction times of the 120 people taking a driving test, giving your answer to 1 decimal place.

(3 marks)

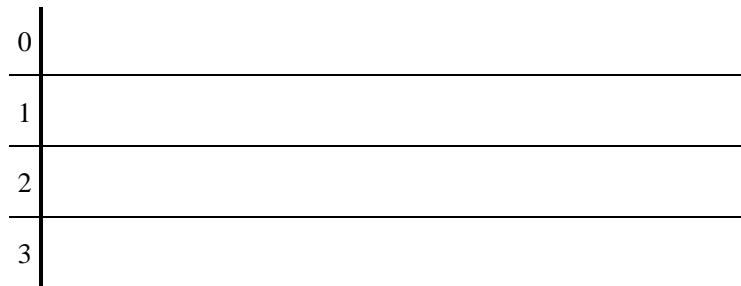
_____ ms

10 23 female adults were asked to skip with a rope continuously for 1 minute and the number of jumps was measured.

Here are the results.

25	21	11	34	14	10	27	4
0	23	25	30	14	27	4	14
24	7	6	32	37	8	7	

(a) Complete the stem and leaf diagram for the data.



Key: 1|0 = 10

(2 marks)

(b) Work out the interquartile range from the data.

(2 marks)

(c) A group of 23 male adults were also measured.

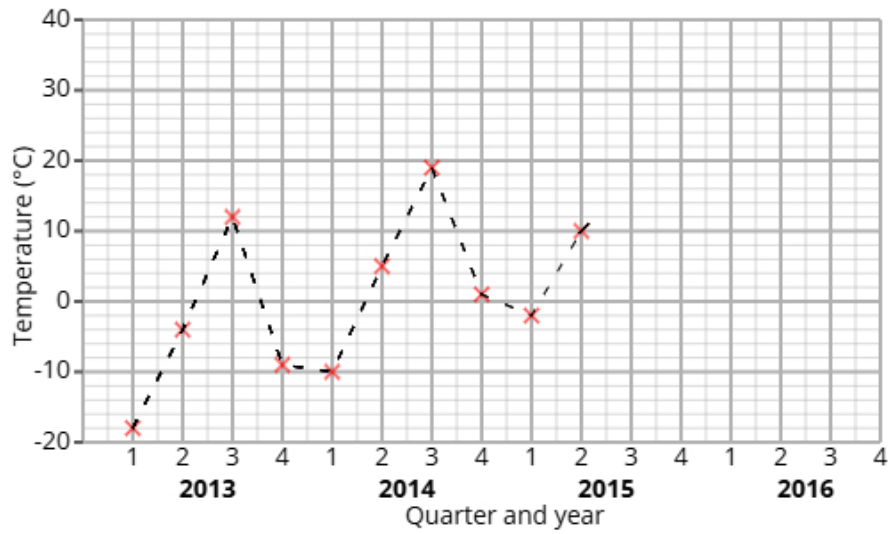
The results from the male adults had a median of 18 and an interquartile range of 17.

Sophie thinks that these results show that males are better at skipping than females.

State whether you agree with Sophie and give reasons why.

(3 marks)

11 The time series graph shows information about the the temperature of Eastern Galm from 2013 to 2015.



Chloe calculates the 4-point moving averages from the time series graph, which are shown below.

-5 -3 -1 1 4 6 7

(a) Identify and interpret in context one example of seasonality displayed in the time series graph.

(2 marks)

(b) Explain why a 4-point moving average is appropriate.

(1 mark)

12 A fair 5-sided spinner is numbered 1, 2, 3, 4, 5.

A fair 3-sided spinner is numbered 1, 2, 3.

The spinners are used to play a game. Both spinners are spun and the total score is recorded.

		3-sided spinner		
		1	2	3
5-sided spinner	1	2	3	
	2	3		
	3			
	4			
	5			

The game is won when the total is at least 6.

Sofia plays the game once.

(a) Complete the sample space diagram.

(2 marks)

(b) Find the probability that Sofia wins the game.

(2 marks)

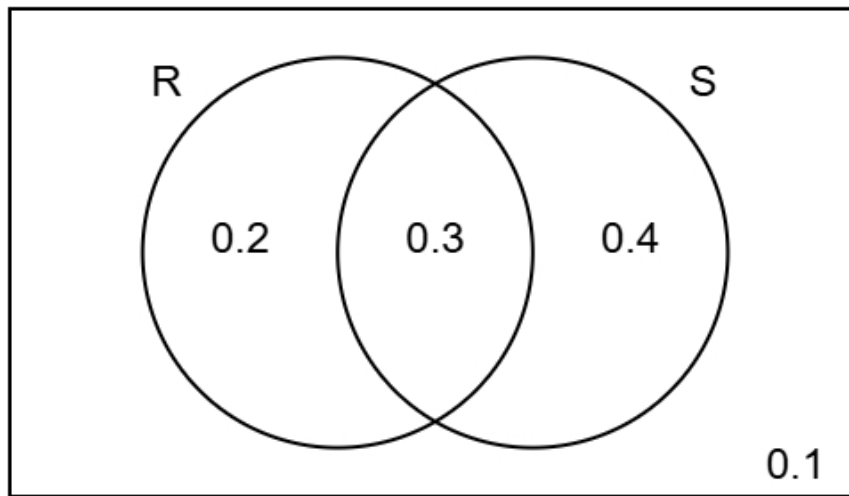
- 13** Noah organises two coding bootcamps, Bootcamp 1 and Bootcamp 2, to teach basic Python programming. He wants to compare the two bootcamps to see which teaches Python better. The table shows number of participants who passed and failed the coding assessment.

	Passed	Failed	Total
Bootcamp 1	24	28	52
Bootcamp 2	15	50	65

- (i) Find the relative risk of failing the coding assessment having been in Bootcamp 1 compared to Bootcamp 2.
- (ii) Give an interpretation of your answer to part (i).

(4 marks)

- 14 The Venn diagram shows information about the probabilities of two events occurring.
The events are labelled as R and S.



- (a) Find the probability of event S happening.

(1 mark)

- (b) Find $P(R \text{ and } S)$

(1 mark)

- (c) Find $P(S | R)$

(2 marks)

(d) Two different events events D and E are independent.

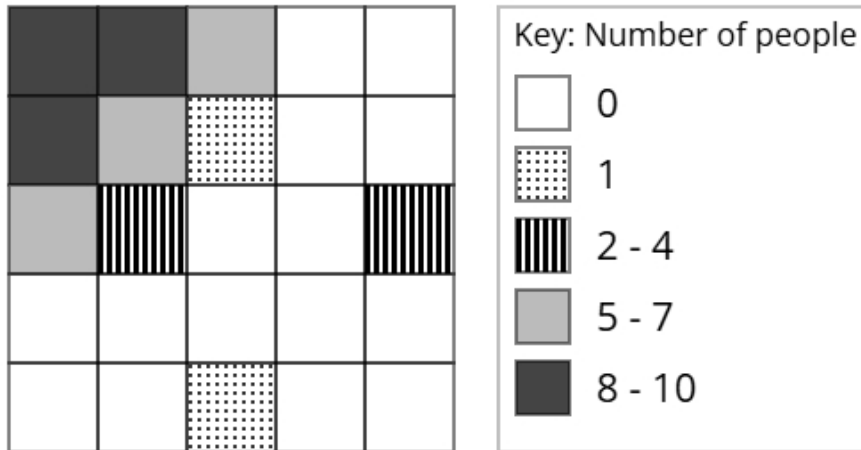
$$P(D) = 0.2$$

$$P(E) = 0.6$$

Find $P(D \text{ and } E)$

(2 marks)

- 15** The choropleth map below represents an airport terminal that has been divided into 25 squares of equal area. Daniel has collected data about the popularity of different parts of the airport terminal. The number of people recorded in each square on one Monday morning is shown.



- (a) Calculate an estimate of the total number of people that were recorded on Monday.

(3 marks)

- (b) Daniel would like to open a bubble tea booth in the airport terminal.

After analysing the data, he decides that he should open the bubble tea booth in the corner of the airport terminal shown at the top left of the choropleth map.

Using the information in the choropleth map, assess the validity of Daniel's conclusion.

(2 marks)

(c) Fatima argues that the method used by Daniel to collect the data is not appropriate for reaching a reliable conclusion.

Assess whether Fatima's argument is correct and give a reason.

(1 mark)
