

Statistics GCSE

Paper 1

Edexcel Foundation - 2026

Foundation Tier

Variant 5

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.
- This site, and all that work on it, have no affiliation or relationship with any exam board.
- This site is not endorsed by any company or charity, unless we state otherwise.

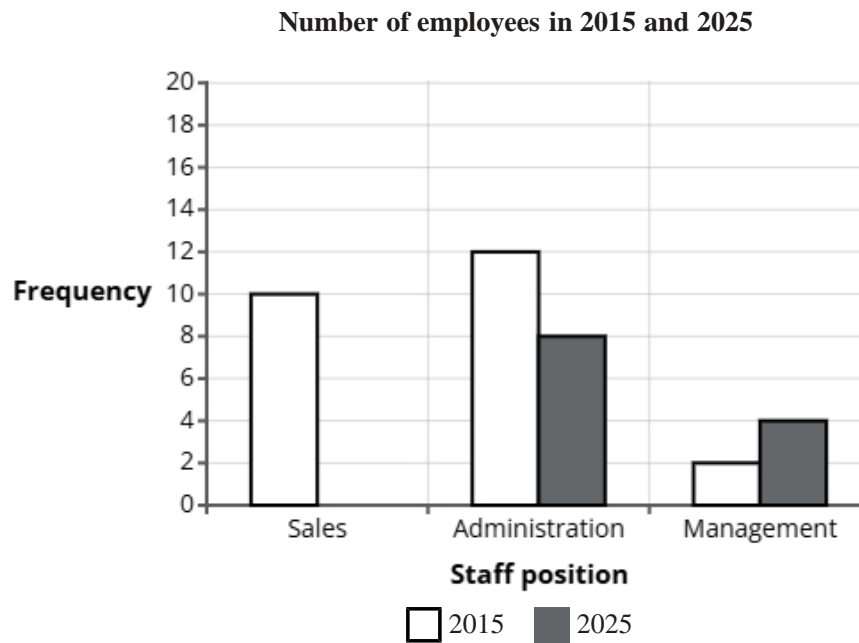
Copyright

- Sharing this PDF is strictly forbidden unless you have the author's permission.
- This paper is only authorised to be used by the person who has bought it.
- You may not store this online or any shared area such as an intranet.
- Please contact us if you have any queries.

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 number of employees working in sales, administration and management for Ted's Tiles in 2015 and 2025.



In 2025, there were 14 employees working in sales.

- (a) Complete the comparative bar chart for sales employees.

(1 mark)

- (b) Find how many more employees worked in administration than management at Ted's Tiles in 2015.

(2 marks)

- (c) Compare the the number of employees who worked in sales, administration and management in 2015.

(2 marks)

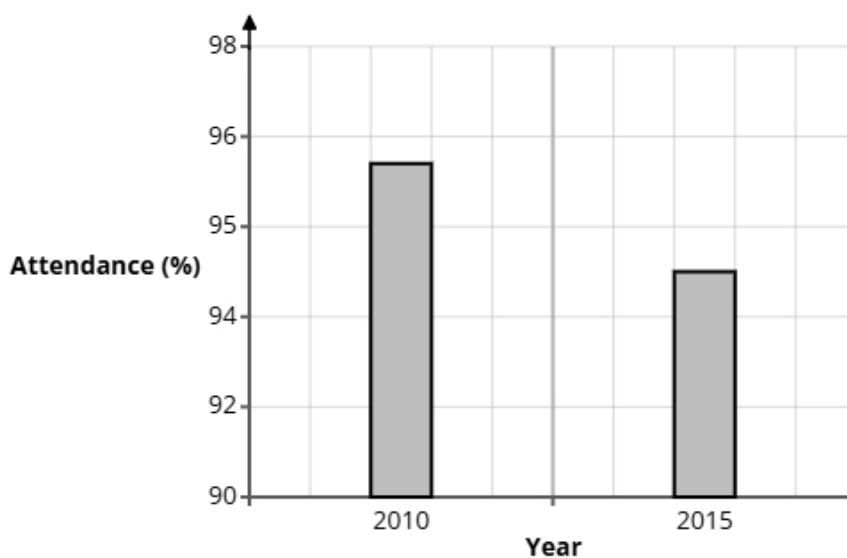
(d) The data displayed in the comparative bar chart is an example of quantitative data.

Explain what is meant by quantitative data.

(1 mark)

2 A newspaper columnist gathered data on school attendance rates at a school 2010 and 2015.

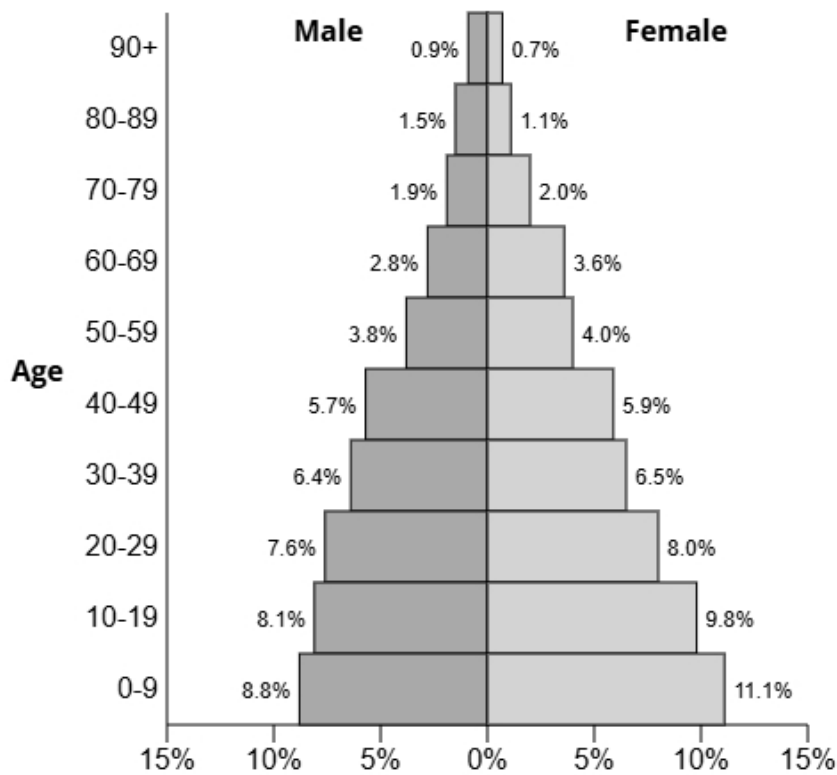
A bar chart is drawn from the information.



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 Redmere.



(a) Write down the percentage of females in the age group 40-49.

(1 mark)

_____ %

(b) Find the age group for males that has 2.8% of the population.

(1 mark)

(c) Find the age group that has 15.6% of the population.

(1 mark)

(d) Compare the percentage of the population aged 40-69 between males and females.

(1 mark)

(e) Give a reason why the sum of all the percentages is 100.2% and not 100%.

(1 mark)

4 A theme park is considering building a new roller coaster.

Mia is carrying out a survey to see what all visitors think about the new attraction.

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

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

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

(1 mark)

5 The manager of a supermarket is reviewing the number of checkout staff on duty.

The manager wants feedback from customers.

He plans to give a questionnaire to customers shopping between 10 am and 12 pm on a Friday and ask them to complete it at home and hand it in the following day.

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

(1 mark)

(b) Assess the supermarket manager's plan to get the opinions of the customers.

(3 marks)

(c) Here is an open question that the supermarket manager is considering for the questionnaire.

What do you think about the number of checkout staff?

Give one reason why this is not a good question.

(1 mark)

(d) Design a suitable closed question for the supermarket manager to use on his questionnaire so that he can decide how many checkouts to open.

(2 marks)

(e) When the supermarket manager has designed his questionnaire, he decides to pre-test it by using a pilot survey with a small sample of customers.

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

(2 marks)

Select **two** boxes.

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

6 A school librarian is interested in how much time students spend reading for pleasure each week.

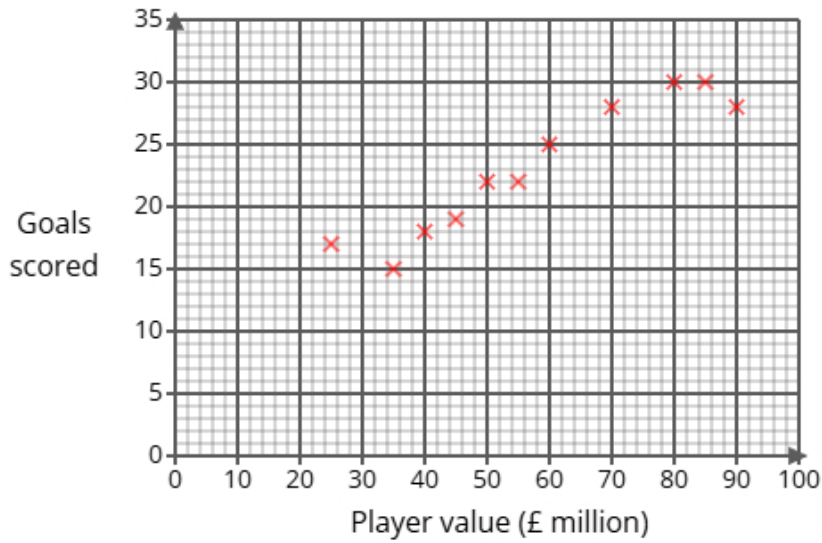
He plans to ask a sample of 20 students to record the number of hours they read in one week.

Each student will write down their reading time on a piece of paper.

Describe one problem the school librarian might face in the statistical enquiry process due to non-response or unexpected results, and explain how he could address this issue.

(2 marks)

7 Alice collected data on 11 football strikers, recording the value (in millions of pounds) and the goals scored last season of each player. She represented her findings in the scatter diagram below.



(a) One of the 11 strikers scored 15 goals last season.

Write down the value of the striker.

(1 mark)

£ _____

(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)

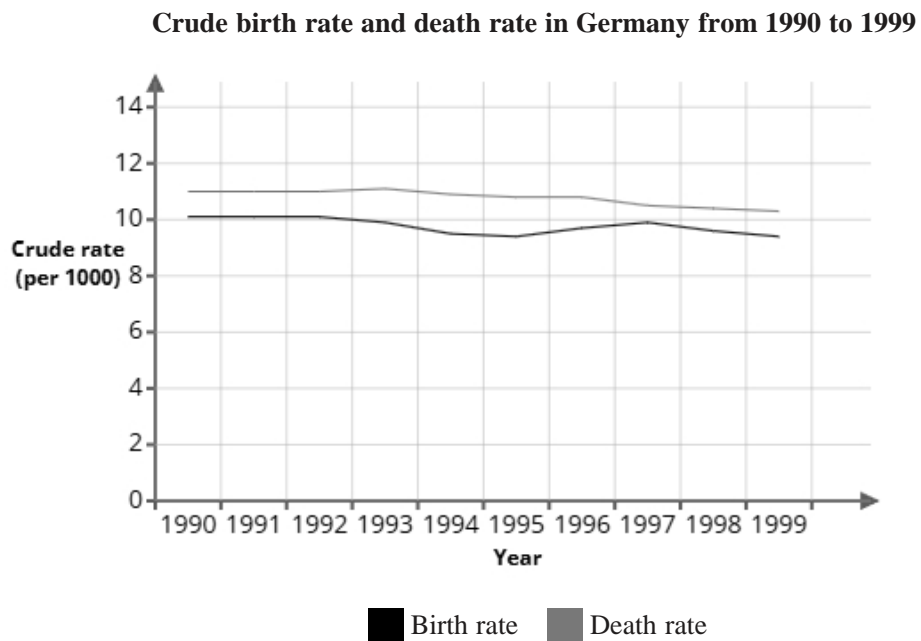
(d) A new strike has just been signed for value of £150 million.

Alice is planning on using the line of best fit on the scatter diagram to predict the goals the strike will score this season.

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 Germany from 1990 to 1999



Maya uses the information in the graph to conclude:

"The total population in Germany has decreased from 1990 to 1999"

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

(1 mark)

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

(1 mark)

(c) In 2000, the population of Germany was 82 445 521.

There were 677 054 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 Olivia investigates the number of pages in 170 books from a library.

The pages range from 302 pages to 389 pages.

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

Table A

Pages	Frequency
$270 < p \leq 300$	0
$300 < p \leq 330$	42
$330 < p \leq 360$	94
$360 < p \leq 390$	34
$390 < p \leq 420$	0

Table B

Pages	Frequency
$300 < p \leq 320$	19
$320 < p \leq 340$	58
$340 < p \leq 360$	59
$360 < p \leq 380$	26
$380 < p \leq 400$	8

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

Assess the appropriateness of Olivia's claim.

(2 marks)

(d) Olivia wants to work out the average number of pages in the 170 books from a library.

She decides to use Table B.

Calculate the average number of pages in the 170 books from a library, giving your answer to 1 decimal place.

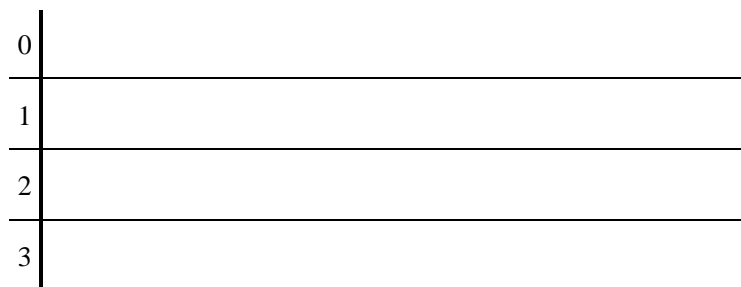
(3 marks)

10 23 male adults were asked to perform a simple dance step repeatedly and the number of completions was measured.

Here are the results.

37	9	10	24	10	27	25	39
8	17	33	39	31	11	10	33
7	9	13	35	23	27	24	

(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 female adults were also measured.

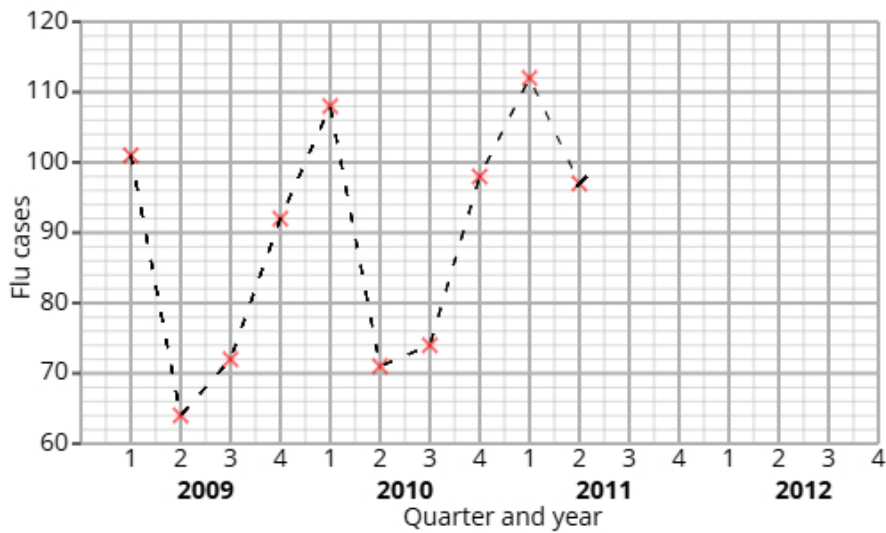
The results from the female adults had a median of 28 and an interquartile range of 27.

David thinks that these results show that females are better at performing a dance step than males.

State whether you agree with David and give reasons why.

(3 marks)

- 11** The time series graph shows information about the the number of flu cases at a doctor's surgery from 2009 to 2011.



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

82 84 86 86 88 89 95

- (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 3-sided spinner is numbered 1, 2, 3.

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

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

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

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

Noah plays the game once.

(a) Complete the sample space diagram.

(2 marks)

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

(2 marks)

13 Mia organises two language workshops, French A and French B, to help people learn conversational French.

She wants to compare the two workshops to see which improves conversation skills.

The table shows number of participants who passed or failed the conversation test.

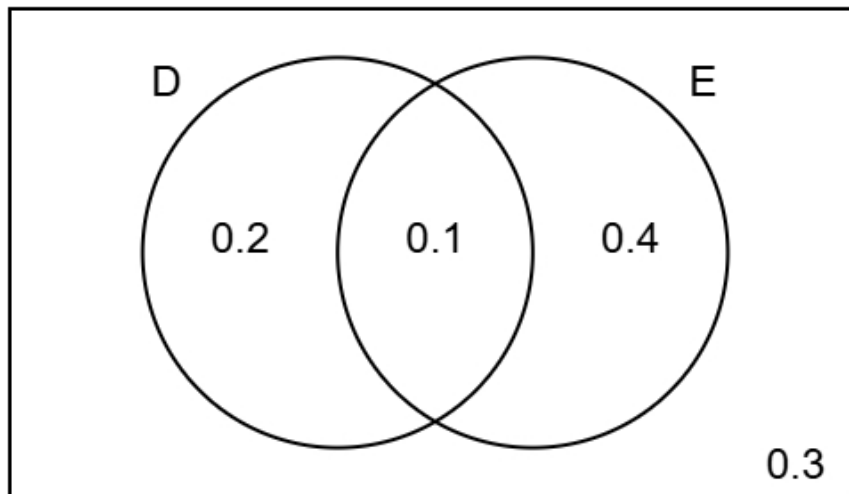
	Passed	Failed	Total
French A	24	16	40
French B	25	50	75

(i) Find the relative risk of failing the conversation test having been in French A compared to French B.

(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 D and E.



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

(1 mark)

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

(1 mark)

- (c) Find $P(E | D)$

(2 marks)

(d) Two different events events A and B are independent.

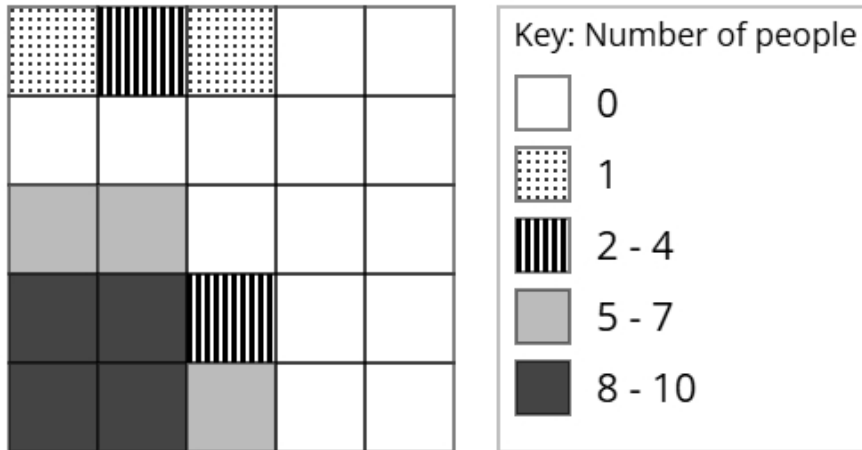
$$P(A) = 0.3$$

$$P(B) = 0.9$$

Find $P(A \text{ and } B)$

(2 marks)

- 15** The choropleth map below represents a university campus that has been divided into 25 squares of equal area. Fatima has collected data about the popularity of different parts of the university campus. The number of people recorded in each square on one Friday morning is shown.



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

(3 marks)

- (b) Fatima would like to open a bagel stand in the university campus.

After analysing the data, she decides that she should open the bagel stand in the corner of the university campus shown at the bottom left of the choropleth map.

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

(2 marks)

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

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

(1 mark)
