

Statistics GCSE**Paper 2**

Edexcel Foundation - 2026

Foundation Tier

Variant 4

1ST0/2F

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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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



Sophia has 6 number tiles shown above.

All of the tiles are placed inside a bag then a random tile is drawn from the bag.

- (a) Select the word describes the likelihood that the tile has a 2 on it.

(1 mark)

Select **one** box.

- likely
 evens
 certain
 unlikely
 impossible

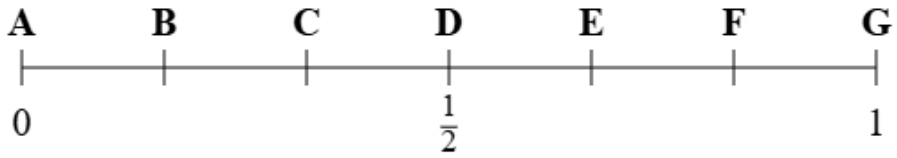
- (b) Select the word describes the likelihood that the tile has a number on it.

(1 mark)

Select **one** box.

- impossible
 likely
 unlikely
 evens
 certain

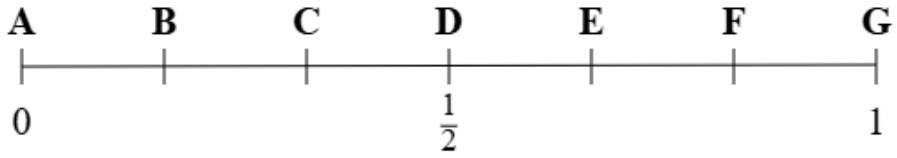
(c)



Using the probability scale, write down the letter that shows probability that the tile has a 2 on it.

(1 mark)

(d)



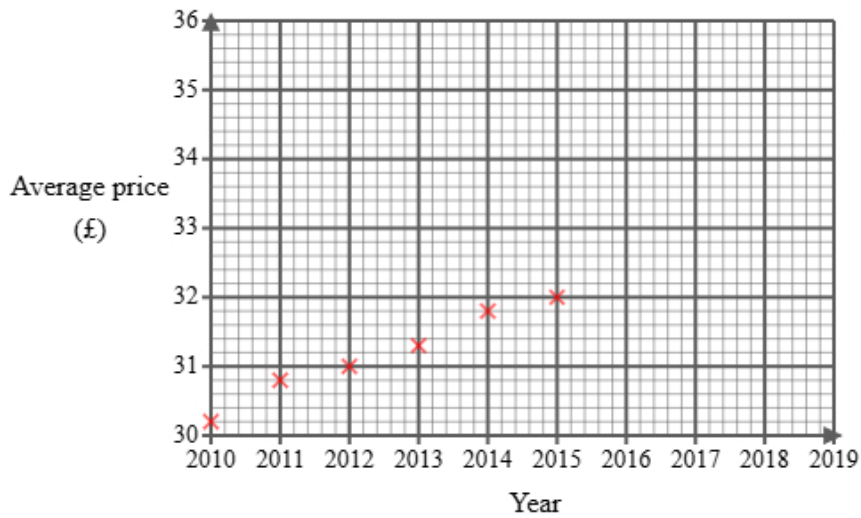
Using the probability scale, write down the letter that shows probability that the tile has a 1 or a 3 on it.

(1 mark)

2 Maya found the following information about the average price of a train ticket in England.

Year	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Average price (£)	30.20	30.80	31.00	31.30	31.80	32.00		32.80	33.00	33.50

She did not find the price for 2016 and has started to draw a graph for the data.



Maya then used statistical software to calculate the equation for the trend line.

- (a) (i) Plot the average price for each of 2017, 2018 and 2019
(ii) Draw a trend line for Maya's data
(iii) Describe the trend in the average price of a train ticket in the UK from 2010 to 2019

(4 marks)

(b) The gradient of Maya's trend line is 0.35

Interpret this gradient.

(1 mark)

(c) Explain whether or not the scale used on the 'average price' axis could make the graph misleading.

(2 marks)

(d) Maya draws the trend line onto the graph.




She suggests that the trend line could be used to estimate the average price for 2016 **and** 2020

Explain whether each of these estimates would be reliable.

You should **not** work them out.

(3 marks)

- 3 A clothing store tracks how many pairs of jeans are sold each day. This information helps with restocking and running special sales based on demand.

Monday	
Tuesday	
Wednesday	
Thursday	
Friday	

Key:



represents 8 pairs of jeans

- (a) On Thursday, the number of pairs of jeans sold was 16.

Show this information on the pictogram.

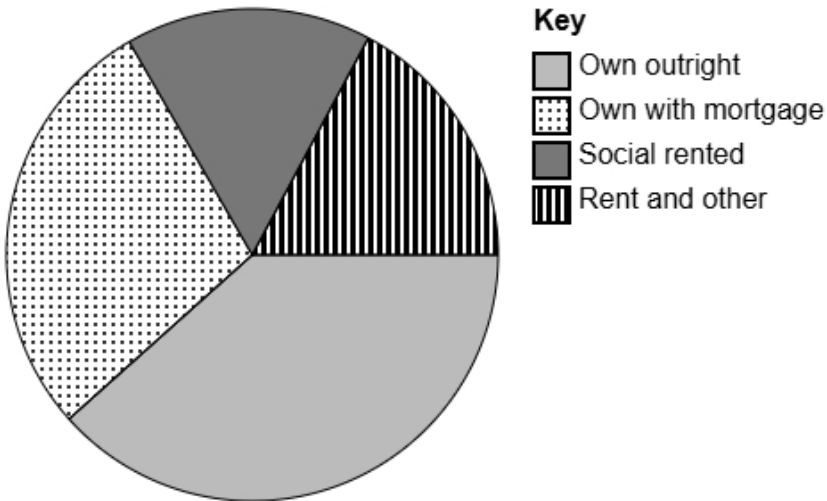
(1 mark)

- (b) Halle suggests redrawing the pictogram using a key with a whole-square representing 5 pairs of jeans.

Explain why this key would **not** be suitable.

(1 mark)

4 The accurately drawn pie chart shows information about the tenure types for people in Wales in 2021.



(a) Explain how you can tell that most households own their house outright in Wales in 2021 using the pie chart.

(1 mark)

(b) In 2021 there was an estimated 130 thousand households.

Calculate an estimate for the number of people in the UK in 2021 who's highest level of qualification was 'Own outright'.

Round your answer to the nearest thousand.

(2 marks)

_____ thousand

5 Alex owns a music shop.

He wants to collect information about types of music liked by people in his town.

The following list gives the information he is going to collect about people's favourite music:

music genre

average song length

number of band members

(a) Select the information that is categorical data from the list.

(1 mark)

(b) Select the information that is discrete data from the list.

(1 mark)

(c) Alex would like to send a questionnaire to 30 of his customers.

He has a list of all 90 of his customers.

Explain how Alex can select a systematic sample of 30 people from his list of customers.

(2 marks)

6 Liam is a student and wants to study favourite school subjects.

He would like to find out the most liked subject in his school.

Liam decides to do convenience sampling outside the school gate an hour after school and uses the data collection sheet shown here:

School subject	Tally
Maths	
English	
Science	
History	

(a) State the population for this study.

(1 mark)

(b) Describe what is meant by a convenience sample.

(1 mark)

(c) Give **one** disadvantage of convenience sampling.

(1 mark)

(d) Discuss whether this data collection sheet is appropriate for Liam to collect the data.

(2 marks)

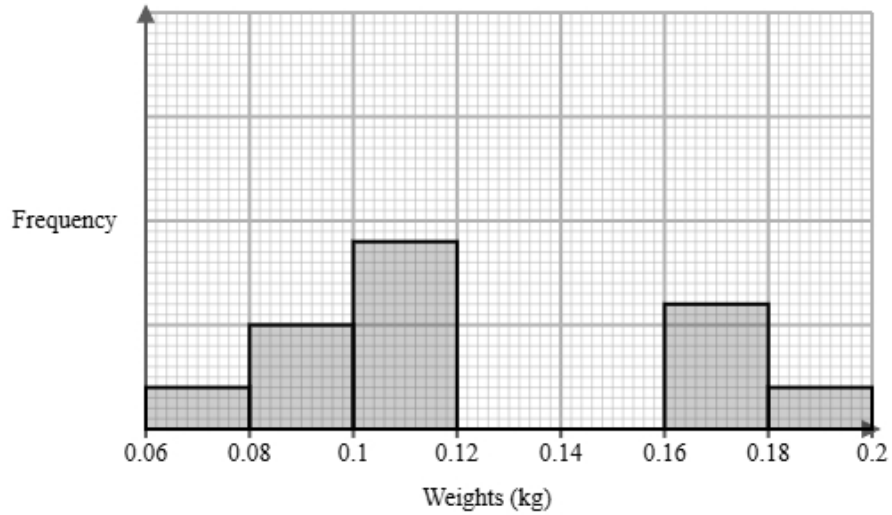
(e) After collecting the data, Liam would like to display the data in a diagram.

Discuss whether or not a stem and leaf diagram would be suitable.

(2 marks)

8 A farmer measured the weights of King Edward potatoes and sweet potatoes in their field. They recorded the weights after 4 months.

The incomplete histogram and grouped frequency table give information about the weights of King Edward potatoes in their field.



Weights w (kg)	Frequency
$0.06 < w \leq 0.08$	2
$0.08 < w \leq 0.10$	5
$0.10 < w \leq 0.12$	9
$0.12 < w \leq 0.14$	12
$0.14 < w \leq 0.16$	9
$0.16 < w \leq 0.18$	
$0.18 < w \leq 0.2$	

(a) Use the information in the histogram to complete the table.

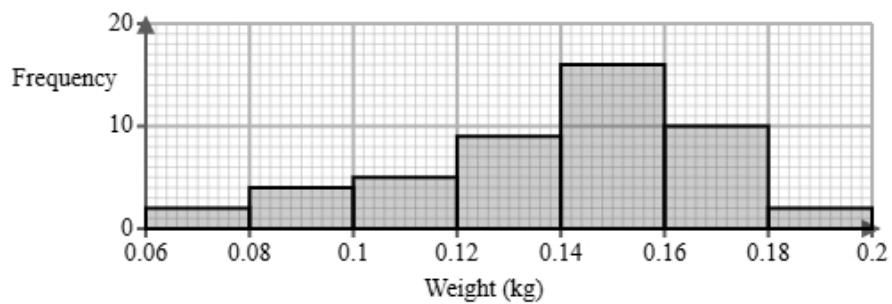
(2 marks)

Weights w (kg)	Frequency
$0.06 < w \leq 0.08$	2
$0.08 < w \leq 0.10$	5
$0.10 < w \leq 0.12$	9
$0.12 < w \leq 0.14$	12
$0.14 < w \leq 0.16$	9
$0.16 < w \leq 0.18$	_____
$0.18 < w \leq 0.2$	_____

(b) Use the information in the table to complete the histogram.

(2 marks)

(c) The histogram below shows data on the weights of sweet potatoes after 4 months.



Identify and interpret the type of skew shown in the histogram for sweet potatoes.

(2 marks)

- (d) The farmer also measured the weights of King Edward potatoes and sweet potatoes in a different field. The grouped frequency table below gives information about the weights of King Edward potatoes and sweet potatoes in a different field.

Weights w (grams)	Frequency	
	King Edward potatoes	sweet potatoes
$80 < w \leq 100$	2	1
$100 < w \leq 120$	18	8
$120 < w \leq 140$	17	16
$140 < w \leq 160$	8	9
Total	45	34

The estimate of the mean for King Edward potatoes is calculated to be 123.8 g to 1 decimal place.

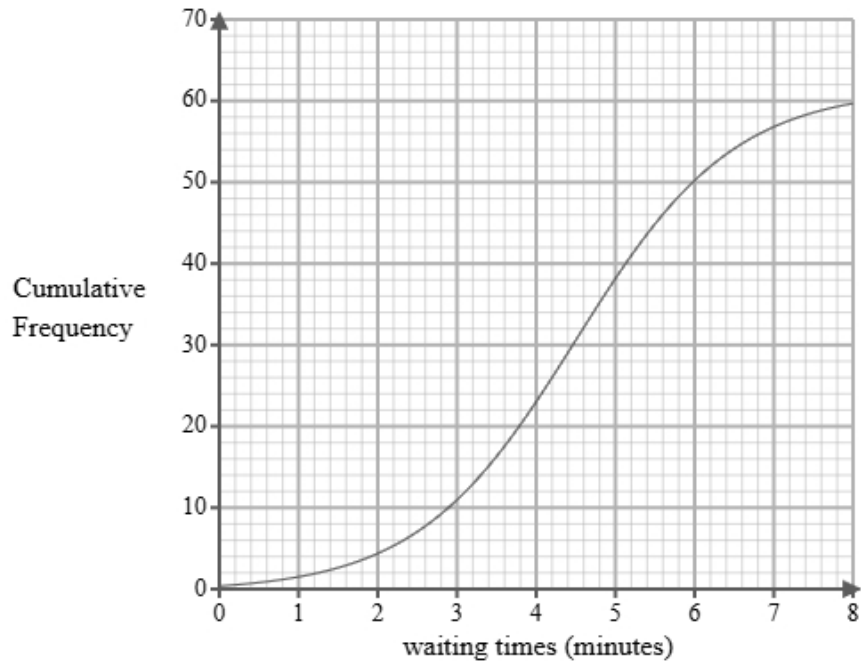
Rajesh uses the estimate of the means for King Edward potatoes and sweet potatoes to conclude that the King Edward potatoes weigh more than sweet potatoes.

Discuss whether or not Rajesh is correct and give **one** limitation of your conclusion.

You must show your working.

(4 marks)

- 9 A researcher measures the waiting times, in minutes, of 60 customers at a café.
A cumulative frequency diagram is drawn from the data.



Complete the table below from the cumulative frequency diagram.

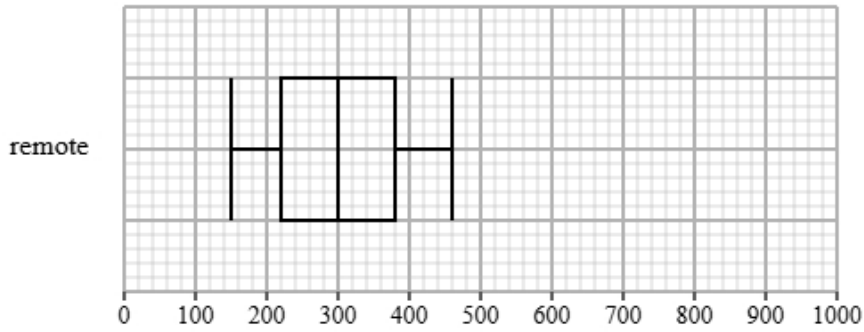
Lower quartile	Median	Upper quartile

(2 marks)

10 Ethan collected the steps for remote and on-site workers in an hour within their day.

Both groups recorded their steps over the same period.

The box plot presents data on the steps for the remote workers.

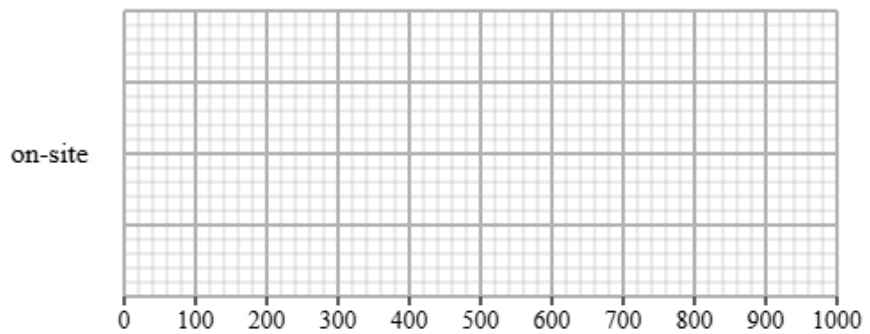


The table gives information about the steps for the on-site workers.

Least tall	Lower quartile	Median	Upper quartile	Most tall
300	550	800	850	900

(a) Draw a box plot for the steps for the on-site workers.

(2 marks)

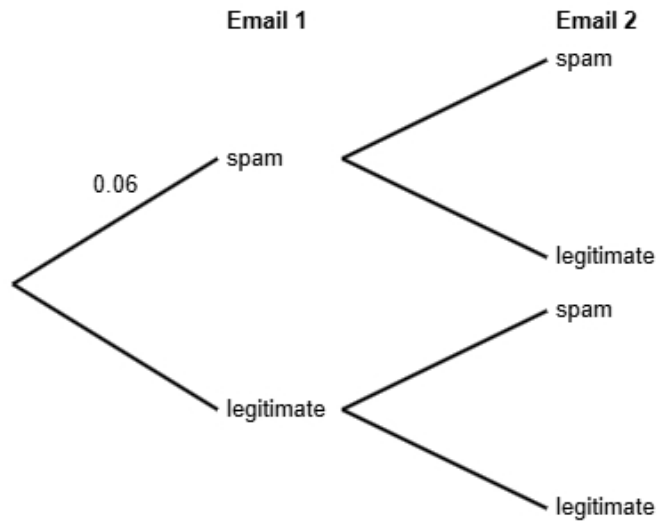


(b) Compare the two distributions of steps.

Give three comparisons and interpret one of these comparisons.

(4 marks)

- 11** A study shows that 6% of emails received by a certain email provider are spam.
 All other emails are legitimate.
 Maria receives two emails in her inbox.
 She does not know if each email is spam or legitimate.



- (a)** Complete the probability tree diagram.

(2 marks)

- (b)** Find the probability that both of Maria's emails are legitimate.

(2 marks)

- (c) Maria states that the probability that exactly one email is spam is less than 12%
Find out whether or not Maria is correct.

(3 marks)

12 The table shows information about bicycles for sale in Birmingham.

gear types	number of bicycles
1	175
2	350
3	200
4	450
5 or more	425
Total	1600

A researcher wants to investigate the price of these bicycles and takes a stratified sample of 64 bicycles according to the gear types.

(a) The researcher says the mode of the gear types for these bicycles is 4.

Explain how the researcher knows this.

(1 mark)

(b) Work out the number of bicycles in the sample for each gear type.

gear types	number of bicycles in the sample
1	
2	
3	
4	
5 or more	

(3 marks)

(c) Describe how the 64 bicycles in the sample should be selected.

(3 marks)

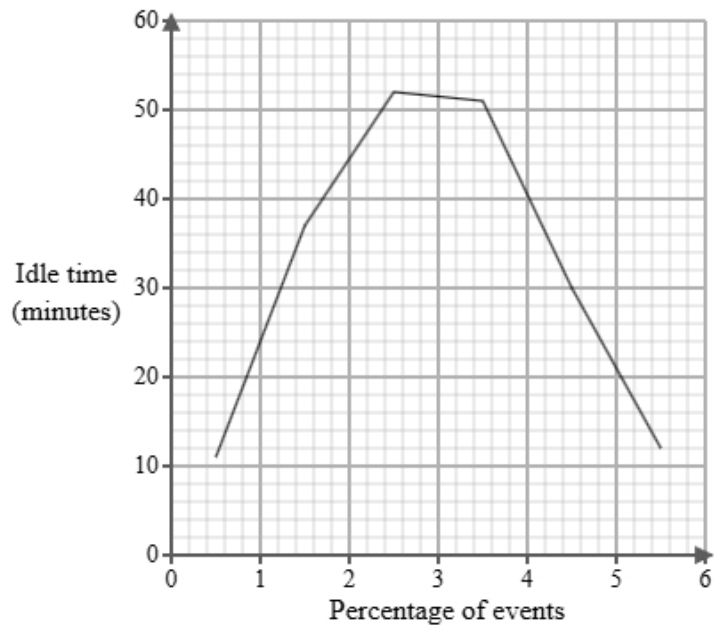
- 13 Tom works for a logistics company. He has been tasked with investigating delivery vehicle idle times. Below is a section of the spreadsheet he used to record his findings.

Idle time (Minutes)	Percentage of events
$0 < d \leq 1$	6
$1 < d \leq 2$	four
$2 < d \leq 3$	9
$3 < d \leq 4$	119
$4 < d \leq 5$	47
$5 < d \leq 6$	15
Total	100

Tom cleans the data to create the table below.

Idle time (Minutes)	Percentage of events
$0 < d \leq 1$	6
$1 < d \leq 2$	4
$2 < d \leq 3$	9
$3 < d \leq 4$	19
$4 < d \leq 5$	47
$5 < d \leq 6$	15
Total	100

A frequency polygon has been drawn for delivery vehicle idle times at a rival firm.



- i) On the same graph, draw the frequency polygon for delivery vehicle idle times for Tom's company.
- ii) Using the two frequency polygons, compare the skew of the distributions and explain what your comparison means in context.

(4 marks)

- 14** The table shows information about the retail price index (RPI) and cinema ticket price (£) in the United Kingdom for Jan 1990, Jan 2000 and Jan 2010.

	Jan 1990	Jan 2000	Jan 2010
retail price index	100	145	177
cinema ticket price (£)	2.81	3.99	5.97

Describe how the increase in cinema ticket price (£) compares with the RPI over the ten years to Jan 2000 and over the twenty years to Jan 2010.

(5 marks)

15 Daniel is investigating how the distance from city centre in km, x , affects the selling price (£), y for two types of houses, detached houses and semi-detached houses.

He found ten houses of each type and recorded their distance from city centre and selling price and plotted each on scatter diagrams.

He then drew a line of best fit on each diagram and found the gradient and y -intercept of each line.

Here are the results:

House type	Gradient of line of best fit	y -intercept of line of best fit
Detached houses	-5000	450000
Semi-detached houses	-4200	380000

Interpret and compare these results in context.

(5 marks)
