

Statistics GCSE**Paper 2**

Edexcel Higher - 2026

Higher Tier

Variant 5

1ST0/2H

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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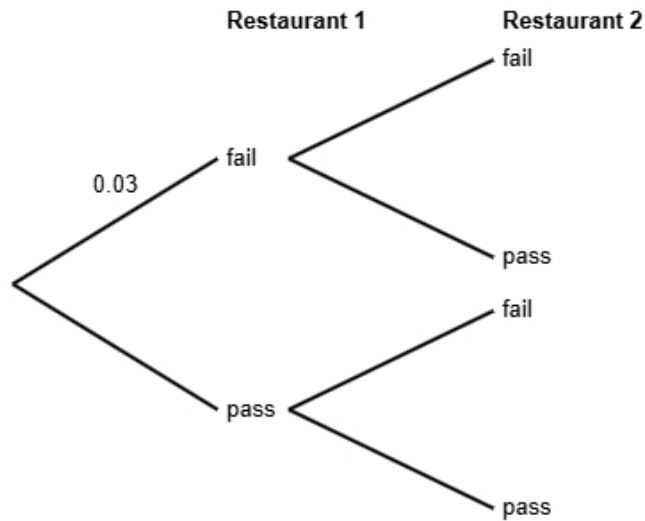
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Advice

- 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** Health inspections show that 3% of restaurants in a city fail basic hygiene standards.
 The rest pass the required health standards.
 Emma is a food safety officer and will be inspecting two different restaurants.
 She does not know if each restaurant will fail or pass.



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

(2 marks)

- (b)** Find the probability that both of Emma's restaurants have an outcome of pass.

(2 marks)

- (c) Emma states that the probability that exactly one restaurant outcome is fail is less than 6%
Find out whether or not Emma is correct.

(3 marks)

2 The table shows information about office spaces in Leeds.

number of desks	number of offices
1	120
2	220
3	740
4	400
5 or more	220
Total	1700

A researcher wants to investigate the price of these office spaces and takes a stratified sample of 85 office spaces according to the number of desks.

(a) The researcher says the mode of the number of desks for these office spaces is 3.

Explain how the researcher knows this.

(1 mark)

(b) Work out the number of offices in the sample for each number of desks.

number of desks	number of offices in the sample
1	
2	
3	
4	
5 or more	

(3 marks)

(c) Describe how the 85 office spaces in the sample should be selected.

(3 marks)

3 Mei works for a marine conservation group. She has been tasked with investigating plastic waste collected by divers.

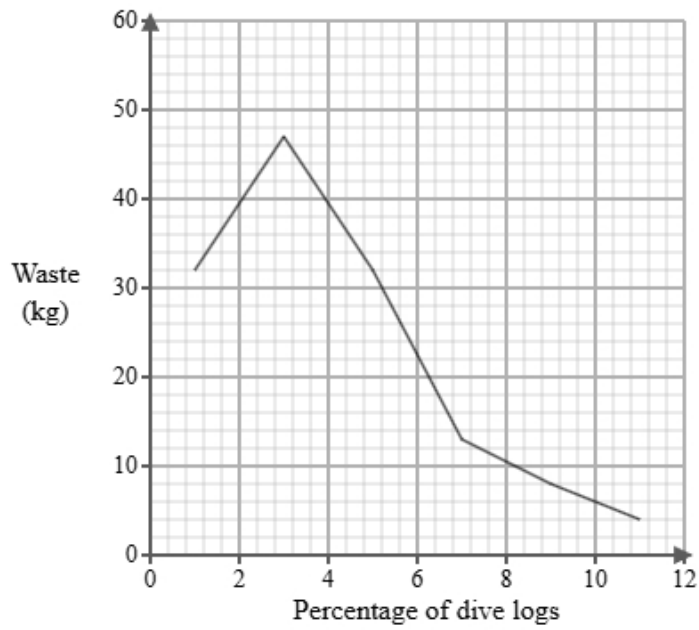
Below is a section of the spreadsheet she used to record her findings.

Waste (kg)	Percentage of dive logs
$0 < p \leq 2$	7
$2 < p \leq 4$	seven
$4 < p \leq 6$	6
$6 < p \leq 8$	118
$8 < p \leq 10$	47
$10 < p \leq 12$	15
Total	100

Mei cleans the data to create the table below.

Waste (kg)	Percentage of dive logs
$0 < p \leq 2$	7
$2 < p \leq 4$	7
$4 < p \leq 6$	6
$6 < p \leq 8$	18
$8 < p \leq 10$	47
$10 < p \leq 12$	15
Total	100

A frequency polygon has been drawn for metal waste collected by divers.



- i) On the same graph, draw the frequency polygon for plastic waste collected by divers.
- ii) Using the two frequency polygons, compare the skew of the distributions and explain what your comparison means in context.

(4 marks)

- 4 The table shows information about the consumer price index (CPI) and average cost of bread (pence) in the United Kingdom for Jan 1990, Jan 2000 and Jan 2010.

	Jan 1990	Jan 2000	Jan 2010
consumer price index	100	130	160
average cost of bread (pence)	65	70	110

Describe how the increase in average cost of bread (pence) compares with the CPI over the ten years to Jan 2000 and over the twenty years to Jan 2010.

(5 marks)

5 Emma is investigating how the engine hours used, x , affects the resale price (£), y for two types of boats, brand A and brand B.

She found ten boats of each type and recorded their engine hours used and resale price and plotted each on scatter diagrams.

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

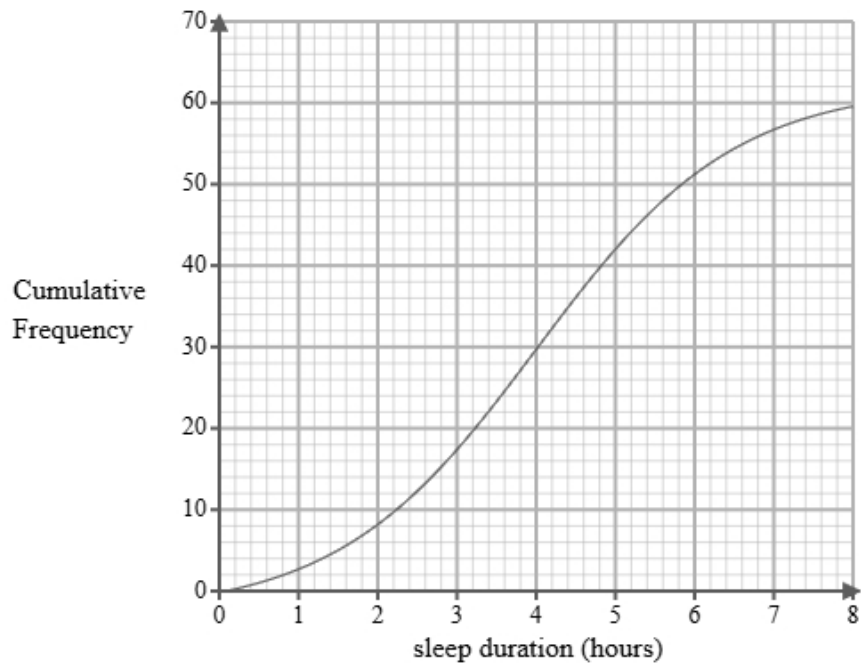
Here are the results:

Brand	Gradient of line of best fit	y -intercept of line of best fit
A	-200	30000
B	-150	38000

Interpret and compare these results in context.

(5 marks)

- 6 A researcher measures the number of hours that 60 students sleep on a specific Saturday. A cumulative frequency diagram is drawn from the data.



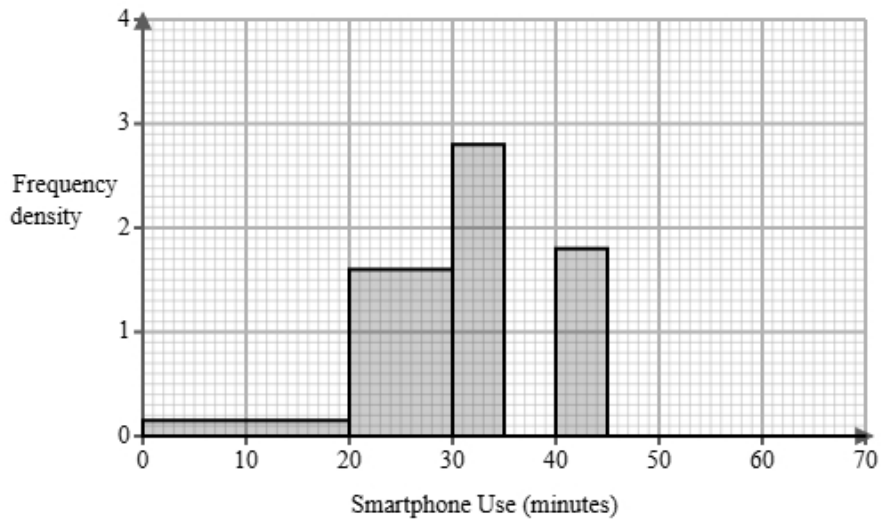
Complete the table below from the cumulative frequency diagram.

Lower quartile	Median	Upper quartile

(2 marks)

7 The time spent using a smartphone is recorded in minutes.

A behavioural researcher is analysing the smartphone usage of 60 adult females over a 1-hour lunch break. The partially completed histogram and grouped frequency table provide details about the recorded usage durations.



Smartphone Use u (minutes)	Frequency
$0 < u \leq 20$	3
$20 < u \leq 30$	16
$30 < u \leq 35$	
$35 < u \leq 40$	13
$40 < u \leq 45$	
$45 < u \leq 70$	5

(a) Complete the table using the information from the histogram.

(2 marks)

(b) Complete the histogram using the information from the table.

(2 marks)

(c) The behavioural researcher finds the following summary statistics for the data.

$$\sum u = 2072$$

$$\sum u^2 = 76144$$

$$n = 60$$

Explain whether or not there may be any outliers in the behavioural researcher's data by calculating the limits for outliers using the mean and standard deviation.

You must round all values to 2 decimal places.

(5 marks)

(d) A different behavioural researcher is analysing the smartphone usage of adult males over a 1-hour lunch break.

They find the following summary statistics for the data.

mean = 28.54

median = 34

standard deviation = 11.1

Calculate and interpret the skew for the males.

You must round your answer to 2 decimal places.

(3 marks)

(e) Find the class interval that contains the 10th percentile.

(1 mark)

- 8 Maya is researching the final league position of basketball teams in a local league and the mean heights of all the players in each team.

The table below shows the data collected.

Team	Mean Height (cm)	Height Rank	Final Position	d	d ²
Barnet	185	8	5	3	9
Basingstoke	175	3	4	-1	1
Carlisle	178	4	3	1	1
Darlington	182	6	7	-1	1
Exeter	183	7	8		
Fareham	170	1	2		
Gloucester	180	5	6		
Harrogate	173	2	1		

- (a) Maya would like to see if there is an association between the final position and the mean value.

Suggest a diagram that Maya could draw.

(1 mark)

(b) i) Calculate Spearman's rank correlation coefficient from the data in the table and leave your answer to 2 decimal places.

ii) Interpret your answer to **part i**, referring to the effects of any anomalous data.

(5 marks)

(c) Maya used Spearman's rank correlation coefficient to analyse the data.

Jack suggests that Maya could have used Pearson's product moment correlation coefficient.

Discuss whether using Pearson's product moment correlation coefficient is appropriate for this data.

(3 marks)

- 9 Mei works for a marine conservation group. She has been tasked with investigating plastic waste collected by divers.

Below is a section of the spreadsheet she used to record her findings.

Waste (kg)	Percentage of dive logs
$0 < p \leq 2$	7
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Total	100

Mei cleans the data to create the table below.

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- (a) Give a reason Mei cleaned the data.

(1 mark)

(b) Use linear interpolation to work out an estimate of the median waste.
Round your answer to one decimal place.

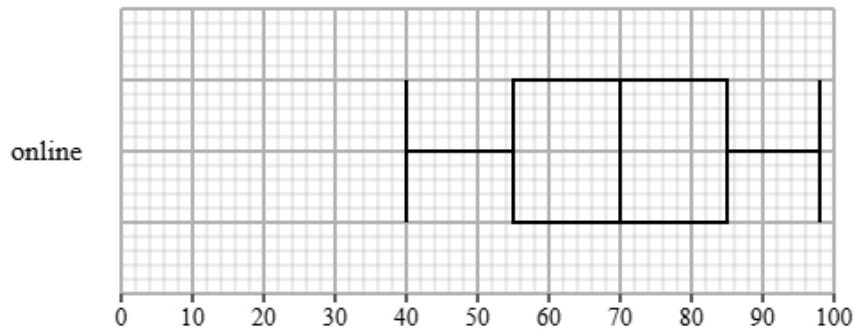
(3 marks)

_____ kg

10 Isla collected the satisfaction scores for online and in-store customers.

Both types of shopping experiences were rated by the same number of customers.

The box plot presents data on the satisfaction scores for the online customers.



The table gives information about the satisfaction scores for the in-store customers.

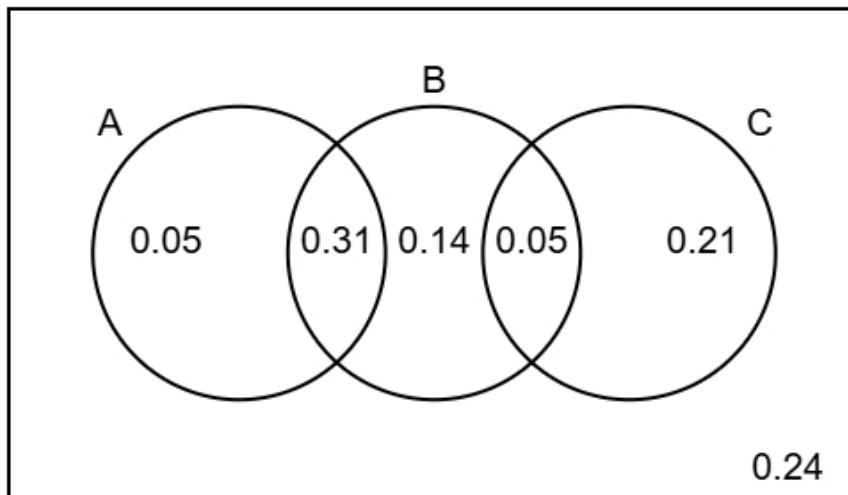
Least tall	Lower quartile	Median	Upper quartile	Most tall
40	60	80	85	90

Compare the two distributions of satisfaction scores.

Give three comparisons and interpret one of these comparisons.

(4 marks)

11 The Venn diagram illustrates the probabilities associated with events A, B, and C.



(a) Identify the **two** events that are mutually exclusive, giving a reason for your answer.

(2 marks)

(b) Find $P(B)$

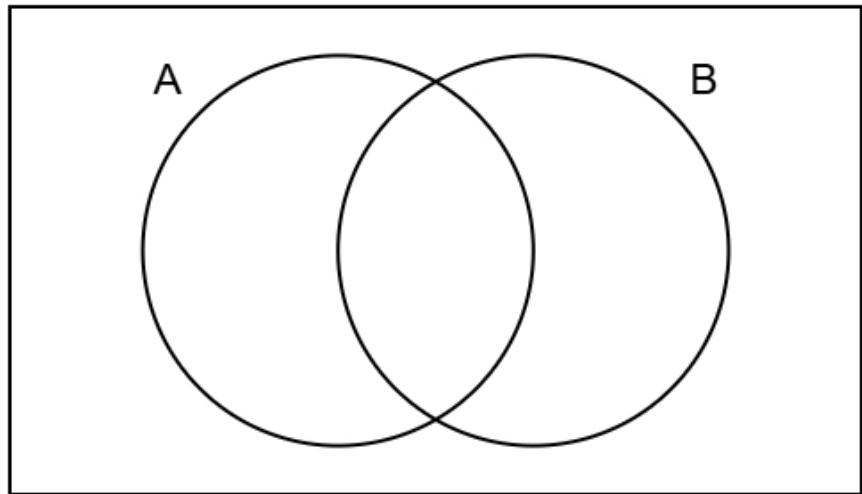
(1 mark)

(c) Find $P(A \text{ or } C)$

(2 marks)

(d) Complete the Venn diagram to show **only** the probabilities for events A and B.

(2 marks)



12 The figures below show the amount, in millions, of tourists who visited Australia between 2013 and 2019

18 20 22 21 23 25 27

The table gives a summary of the amount, in millions, of tourists who visited Japan between 2013 and 2019

Mean	Standard Deviation	Largest Amount
22	3	25

Compare the amount of tourists in Australia and Japan between 2013 and 2019

You may use:

$$18^2 + 20^2 + 22^2 + 21^2 + 23^2 + 25^2 + 27^2 = 3532$$

(5 marks)

13 The running speeds of a group of athletes have a mean of 14.5 km/h and a standard deviation of 1.8 km/h.

(a) Olivia is athlete with a standardised score of 0.

Find Olivia's running speed.

(1 mark)

_____ km/h

(b) Aisha and Mia are both athletes in the group.

Aisha's standardised score for running speed is 1.3 km/h.

Mia's standardised score for running speed is -0.7 km/h.

Aisha was faster than Mia.

How much faster is Aisha?

(3 marks)

_____ km/h

