

**Statistics GCSE****Paper 2**

Edexcel Higher - 2026

Higher Tier

Variant 3

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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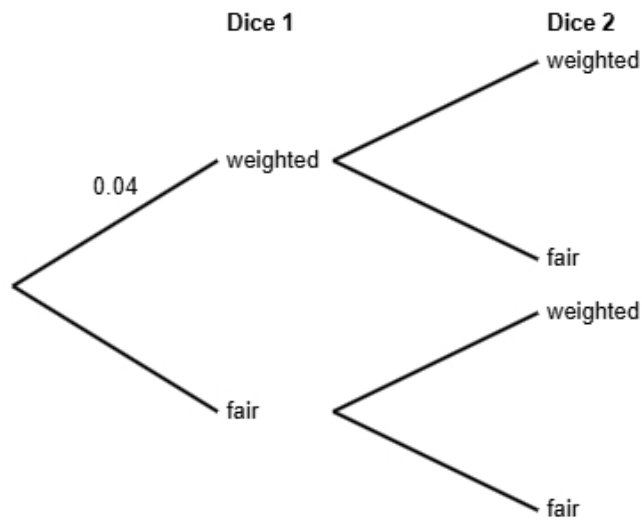
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**Advice**

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

- 1** A company found that 4% of its dice are slightly weighted and do not roll fairly.  
The rest of the dice are perfectly balanced.  
Jack picks two dice from a random batch.  
He does not know if each die is weighted or fair.



- (a) Complete the probability tree diagram.

(2 marks)

- (b) Find the probability that both of Jack's dice are fair.

(2 marks)

- (c) Jack states that the probability that exactly one dice is weighted is less than 8%  
Find out whether or not Jack is correct.

(3 marks)

2 The table shows information about laptops for sale in London.

screen size (inches)	number of laptops
13	660
15	540
17	240
19	150
20 or more	210
Total	1800

A researcher wants to investigate the price of these laptops and takes a stratified sample of 60 laptops according to the screen size (inches).

(a) The researcher says the mode of the screen size (inches) for these laptops is 13.

Explain how the researcher knows this.

(1 mark)

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(b) Work out the number of laptops in the sample for each screen size.

screen size (inches)	number of laptops in the sample
13	
15	
17	
19	
20 or more	

(3 marks)

(c) Describe how the 60 laptops in the sample should be selected.

(3 marks)

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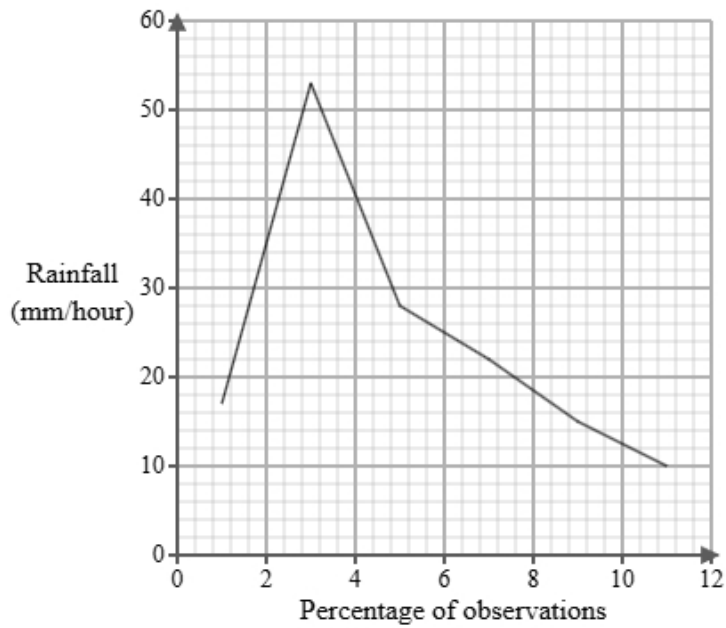
- 3 Priya works for a meteorological office. She has been tasked with investigating rainfall intensity in June. Below is a section of the spreadsheet she used to record her findings.

Rainfall (mm/hour)	Percentage of observations
$0 < r \leq 2$	5
$2 < r \leq 4$	eight
$4 < r \leq 6$	7
$6 < r \leq 8$	120
$8 < r \leq 10$	47
$10 < r \leq 12$	13
Total	100

Priya cleans the data to create the table below.

Rainfall (mm/hour)	Percentage of observations
$0 < r \leq 2$	5
$2 < r \leq 4$	8
$4 < r \leq 6$	7
$6 < r \leq 8$	20
$8 < r \leq 10$	47
$10 < r \leq 12$	13
Total	100

A frequency polygon has been drawn for rainfall intensity in August.



- i) On the same graph, draw the frequency polygon for rainfall intensity in June.
- ii) Using the two frequency polygons, compare the skew of the distributions and explain what your comparison means in context.

(4 marks)

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- 4 The table shows information about the retail price index (RPI) and NHS Prescription Charges (£) in England for Jan 1995, Jan 2005 and Jan 2015.

	<b>Jan 1995</b>	<b>Jan 2005</b>	<b>Jan 2015</b>
retail price index	100	121	173
NHS Prescription Charges (£)	5.25	6.5	8.05

Describe how the increase in NHS Prescription Charges (£) compares with the RPI over the ten years to Jan 2005 and over the twenty years to Jan 2015.

(5 marks)

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5 Aisha is investigating how the age in years,  $x$ , affects the resale price (£),  $y$  for two types of smartphones, model X and model Y.

She found ten smartphones of each type and recorded their age 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:

Model	Gradient of line of best fit	y-intercept of line of best fit
X	-80	900
Y	-65	1100

Interpret and compare these results in context.

(5 marks)

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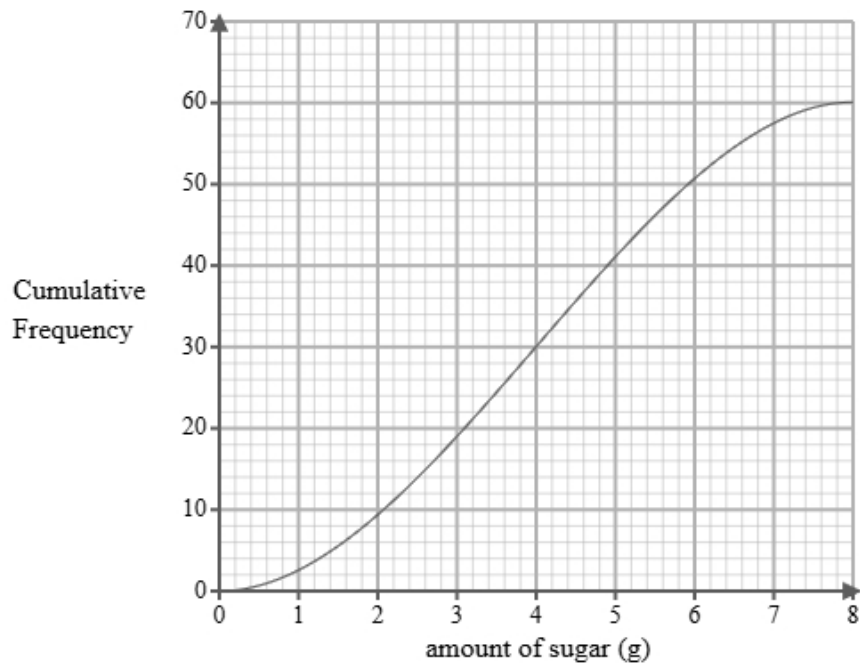
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- 6 A researcher measures the amount of sugar, in grams, in 60 different breakfast cereals.  
A cumulative frequency diagram is drawn from the data.



Complete the table below from the cumulative frequency diagram.

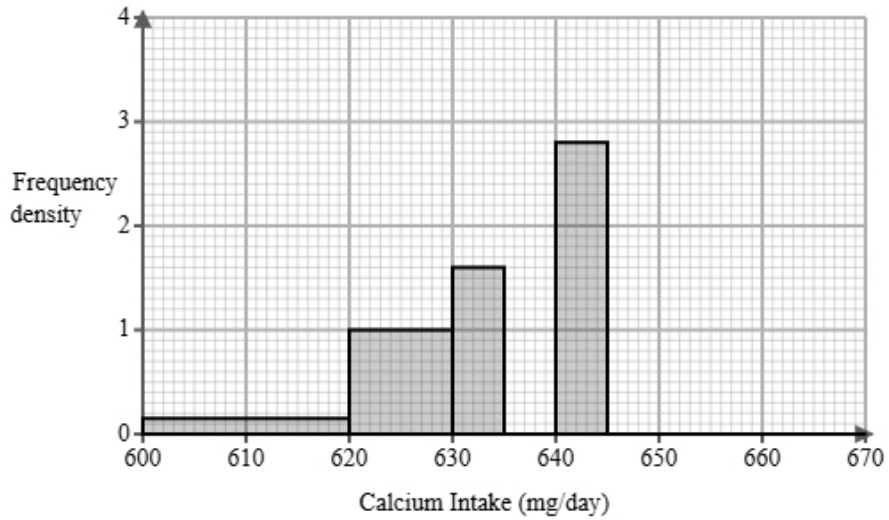
Lower quartile	Median	Upper quartile

(2 marks)

7 The calcium intake is recorded in milligrams per day (mg/day).

A dietitian is analysing the daily calcium intake of 60 adult women who have fasted for 12 hours.

The partially completed histogram and grouped frequency table provide details about the calcium intake levels recorded.



Calcium Intake $c$ (mg/day)	Frequency
$600 < c \leq 620$	3
$620 < c \leq 630$	10
$630 < c \leq 635$	
$635 < c \leq 640$	15
$640 < c \leq 645$	
$645 < c \leq 670$	10

(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 dietitian finds the following summary statistics for the data.

$$\sum c = 38218$$

$$\sum c^2 = 24348590$$

$$n = 60$$

Explain whether or not there may be any outliers in the dietitian'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)

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(d) A different dietitian is analysing the daily calcium intake of adult men who have fasted for 12 hours. They find the following summary statistics for the data.

mean = 649.54

median = 680

standard deviation = 11.3

Calculate and interpret the skew for the men.

You must round your answer to 2 decimal places.

(3 marks)

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(e) Find the class interval that contains the 20th percentile.

(1 mark)

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- 8 Hannah 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 <sup>2</sup>
Ashford	179	7	8	-1	1
Banbury	180	8	7	1	1
Chelmsford	170	3	1	2	4
Crawley	168	1	3	-2	4
Dover	176	6	6		
Epsom	169	2	2		
Fareham	173	4	5		
Gravesend	175	5	4		

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

Suggest a diagram that Hannah could draw.

(1 mark)

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(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)

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

Harry suggests that Hannah 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)

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- 9 Priya works for a meteorological office. She has been tasked with investigating rainfall intensity in June. Below is a section of the spreadsheet she used to record her findings.

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Priya cleans the data to create the table below.

Rainfall (mm/hour)	Percentage of observations
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- (a) Give a reason Priya cleaned the data.

(1 mark)

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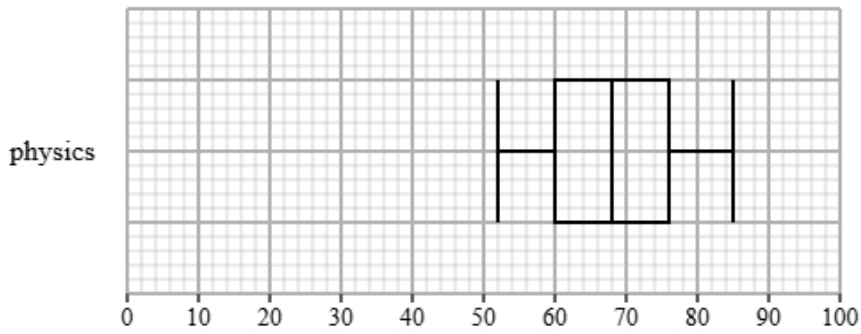
(b) Use linear interpolation to work out an estimate of the median rainfall.  
Round your answer to one decimal place.

(3 marks)

\_\_\_\_\_ mm/hour

**10** Olivia collected the marks for physics and business students from a statistics exam.  
Both groups took the same exam.

The box plot presents data on the marks for the physics students.



The table gives information about the marks for the business students.

Least tall	Lower quartile	Median	Upper quartile	Most tall
52	58	60	72	85

Compare the two distributions of marks.

Give three comparisons and interpret one of these comparisons.

(4 marks)

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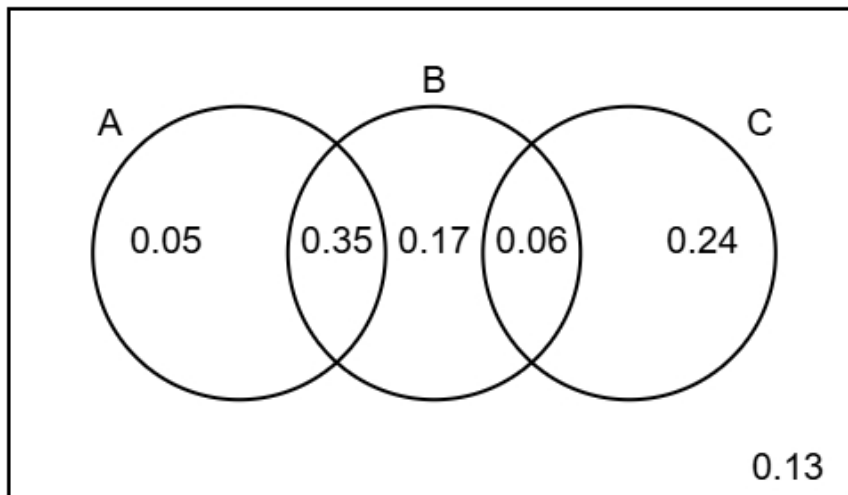


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11 The Venn diagram illustrates the probabilities associated with events A, B, and C.



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

(2 marks)

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(b) Find  $P(B)$

(1 mark)

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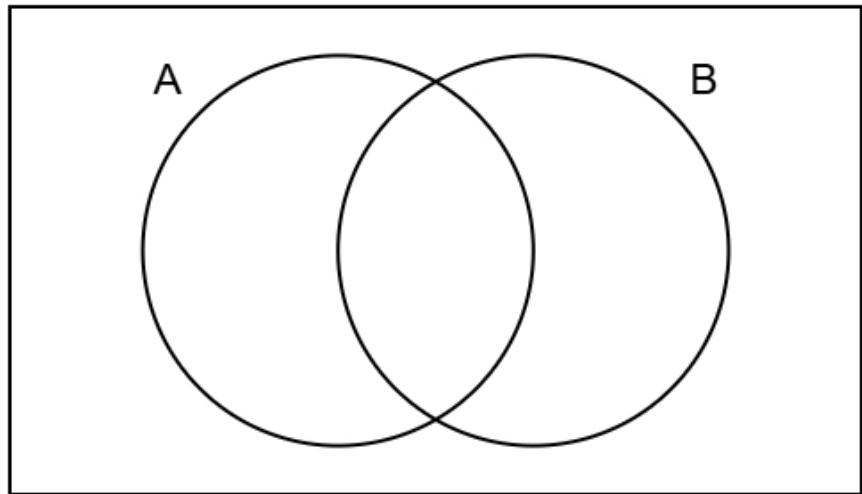
(c) Find  $P(A \text{ or } C)$

(2 marks)

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(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 Italy between 2011 and 2017

45 48 50 47 52 55 57

The table gives a summary of the amount, in millions, of tourists who visited Spain between 2011 and 2017

Mean	Standard Deviation	Largest Amount
50	5	55

Compare the amount of tourists in Italy and Spain between 2011 and 2017

You may use:

$$45^2 + 48^2 + 50^2 + 47^2 + 52^2 + 55^2 + 57^2 = 18016$$

(5 marks)

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**13** The heights of a group of ten-year-old girls have a mean of 137.5 cm and a standard deviation of 4.9 cm.

(a) Sophie is ten-year-old girl with a standardised score of 0.

Find Sophie's height.

(1 mark)

\_\_\_\_\_ cm

(b) Amelia and Ruby are both ten-year-old girls in the group.

Amelia's standardised score for height is 1.1 cm.

Ruby's standardised score for height is -0.3 cm.

Amelia is taller than Ruby.

How much taller is Amelia?

(3 marks)

\_\_\_\_\_ cm

