

Statistics GCSE**Paper 2**

2025

Edexcel Foundation

Variant 2

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 Lisa asked her colleagues in her office which coffee they prefer from the choices Espresso, Latte, Cappuccino and Mocha.

Their answers are shown below:

Latte Cappuccino Espresso Latte Mocha Espresso
Espresso Latte Cappuccino Mocha Espresso Latte Espresso
Espresso Espresso Cappuccino Espresso Mocha Latte Latte

(a) Complete the tally and frequency columns on the frequency table for the data.

(2 marks)

Coffee	Tally	Frequency
Espresso		
Latte		
Cappuccino		
Mocha		

(b) Find the number of colleagues in Lisa's office.

(1 mark)

(c) Compare the amount of colleagues who chose Espresso with the amount who chose Mocha.

(1 mark)

(d) Lisa finds the mode from the data.

Give a reason why the mode is an appropriate average to use in this situation.

(1 mark)

(e) Give **one** advantage of displaying this data in a tally chart rather than leaving it as raw data.

(1 mark)

2 The table shows the results of a survey into Weekly Physical Activity.
 For example, 30% of all respondents said "Went to the gym" but only 25% of 16-24 year olds said this.

Some respondents participated in more than one option.

Physical Activity	All People %	Gender		Age			
		Male	Female	18-26	27-36	37-56	57+
Went to the gym	30%	25%	35%	25%	27%	33%	35%
Played outdoor sports	70%	72%	68%	78%	72%	69%	61%
Did home workouts	42%	37%	47%	38%	41%	43%	46%
Did yoga or pilates	15%	11%	19%	12%	16%	17%	15%
Went running or jogging	28%	34%	22%	36%	22%	26%	28%
Attended fitness classes	28%	21%	35%	11%	19%	36%	46%
Went cycling	39%	40%	38%	48%	46%	35%	27%
Walked for exercise	42%	45%	39%	34%	42%	34%	58%
None of the above	5%	6%	4%	7%	5%	5%	3%

(a) A person who selected **Attended fitness classes** is chosen at random.
 Describe the most likely gender and age of the person.

(2 marks)

(b) Describe the relationship in the data between attending fitness classes and age.

(1 mark)

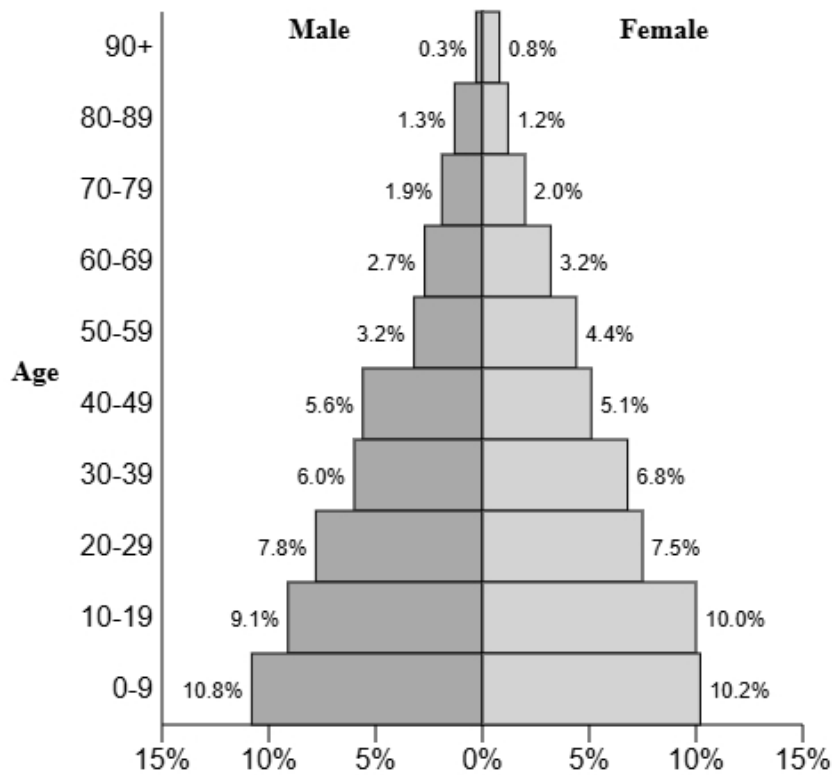
(c) Amelia is starting a yoga class.

She suspects that over half of her customers will be female.

Explain how she used the information from the table to come to this conclusion.

(1 mark)

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



(a) Write down the percentage of females in the age group 30-39.

(1 mark)

_____ %

(b) Find the age group for males that has 3.2% of the population.

(1 mark)

(c) Find the age group that has 19.1% of the population.

(1 mark)

(d) Compare the percentage of the population aged 20-49 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 theatre sells four different ticket types at different prices.
The tickets for a weekend have been recorded in this table.

Ticket price	£35	£45	£75	£105	Total
Amount sold	1092	728	494	286	2600

The owner of the theatre wants to open up a new theatre in a different city.
She uses the data to predict how the tickets will sell in the new location.

Ticket price	£35	£45	£75	£105
Predicted proportion	42%	28%	19%	11%

- (a) The owner want to improve her predictions.

Explain how she can do this.

(1 mark)

(b) The owner opens up the new theatre.

The table below shows the tickets sales over the opening weekend at the new theatre.

Ticket price	£35	£45	£75	£105
True proportion	33%	25%	23%	19%

Compare the sales of £105 tickets at the new location compared to the original location and suggest a reason for any difference.

(2 marks)

5 Aisha owns a food truck that sells sandwiches.

Customers can choose either chicken or tuna sandwich **and** either a iced tea or a orange juice drink.

She records her sales in a two-way table, but the table is incomplete.

	iced tea	orange juice	Total
chicken sandwich		46	96
tuna sandwich	49	32	
Total	99		177

(a) Complete the two way table.

(2 marks)

	iced tea	orange juice	Total
chicken		46	96
tuna	49	32	
Total	99		177

6 A city council is considering adding more public transport routes.
Ethan wants to conduct a survey to learn what all the residents in the city think about the plan.

Ethan thinks that he should take a sample rather than a census.

(a) Give two reasons why Ethan might think this.

(2 marks)

(b) Ethan has decided to use the electoral register as a sampling frame.
Explain what a sampling frame is.

(1 mark)

(c) Ethan has decided to use the electoral register as a sampling frame.
State one problem Ethan may have using the electoral register as a sampling frame.

(1 mark)

(d) Give **two** reasons why Ethan should conduct a pilot survey.

(2 marks)

7 David is a local council officer studying the salaries of secondary school teachers in his borough.

He takes a simple random sample of 10 teachers from different schools and asks them to provide their annual salary.

The annual salary of the 10 people are listed:

£38 000	£36 500	£34 500	£35 000	£80 000
£37 000	£36 500	£31 000	£34 000	£37 500

David believes that one of the values is an outlier.

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

(1 mark)

(b) Write down the value that is most likely to be an outlier and explain why you think this value is an outlier.

(2 marks)

(c) David removes the outlier.

State whether the mean of the remaining nine values is greater than, is equal to or is less than the mean of all ten salaries.

Give a reason for your answer.

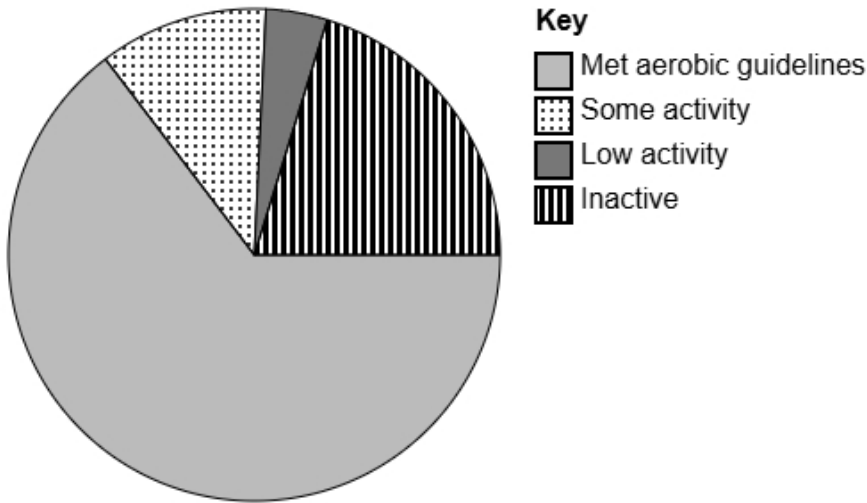
(2 marks)

(d) After calculating the mean of the nine salaries without the outlier, David uses this mean in a report to describe all the teachers in the borough.

Describe two things that could affect the reliability of her conclusions.

(2 marks)

8 The accurately drawn pie chart shows information about how many people in England met the guidelines for aerobic activity levels in 2021.



(a) Explain how you can tell that most people met the aerobic guidelines in England in 2021 using the pie chart.

(1 mark)

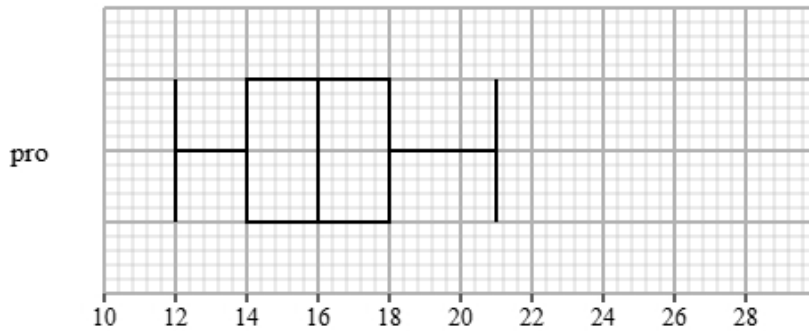
(b) The population in England in 2021 was estimated to be 56 million.
Calculate an estimate for the number of people in the UK in 2021 who 'Met aerobic guidelines'.

Round your answer to the nearest million.

(2 marks)

_____ million

- 9 Liam recorded the completion times for pro and beginner runners in a 5K race. Both groups ran the same course. The box plot presents data on the completion times for the pro runners.

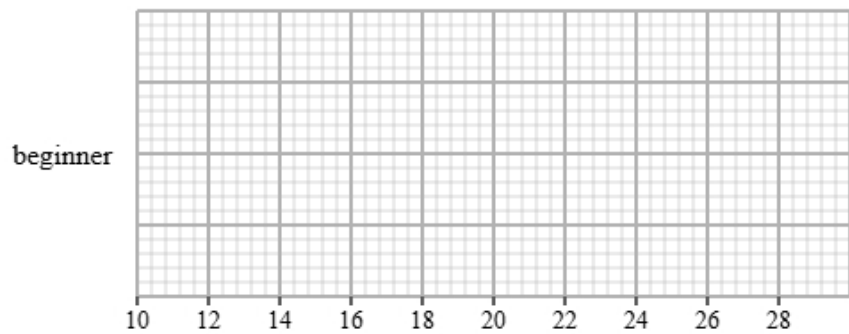


The table gives information about the completion times for the beginner runners.

Least tall	Lower quartile	Median	Upper quartile	Most tall
17	19	20	24	30

- (a) Draw a box plot for the completion times for the beginner runners.

(2 marks)



(c) A new car will be releasing soon with a price of £250,000.

Emma is planning on using the line of best fit on the scatter diagram to predict the top speed of the new car.

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

(2 marks)

11 Liam investigates the weights of 180 dogs at a pet shelter.

The weights range from 32 kg to 78 kg.

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

Table A

Weight (w kg)	Frequency
$0 < w \leq 30$	0
$30 < w \leq 60$	87
$60 < w \leq 90$	93
$90 < w \leq 120$	0
$120 < w \leq 150$	0

Table B

Weight (w kg)	Frequency
$30 < w \leq 40$	5
$40 < w \leq 50$	28
$50 < w \leq 60$	54
$60 < w \leq 70$	59
$70 < w \leq 80$	34

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

(2 marks)

-
- (b) Liam feels that Table B gives more detail than Table A about the results.
Assess the appropriateness of Liam's claim.

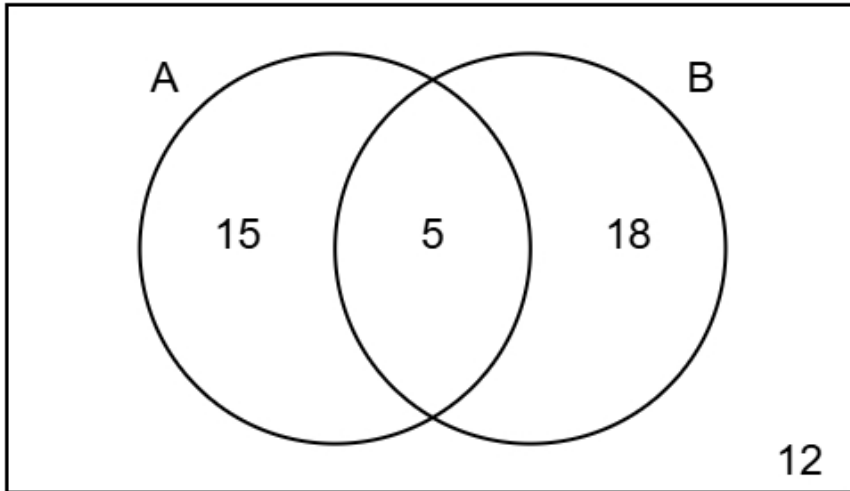
(2 marks)

- (c) Liam wants to work out the average weight of the 180 dogs at the pet shelter.
He decides to use Table B.
Calculate the average weight of the 180 dogs at the pet shelter, giving your answer
to 1 decimal place.

(3 marks)

_____ kg

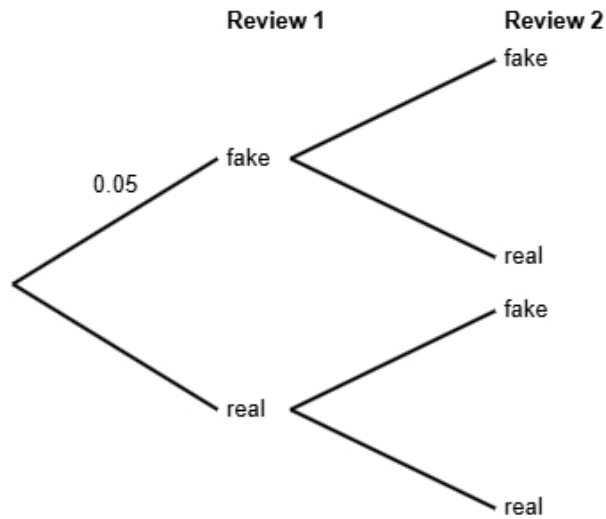
- 12** The Venn diagram shows information about 50 students in a school.
A is the event that the student plays a musical instrument.
B is the event that the student is part of the school's debate team.
The numbers in the Venn diagram indicate the number of students.



- (a)** In the Venn diagram, explain what the number 5 means.

(1 mark)

13 Research suggests that 5% of online product reviews are fake.
 All other reviews are genuine.
 Emma is reading two reviews for a product.
 She does not know if each review is fake or real.



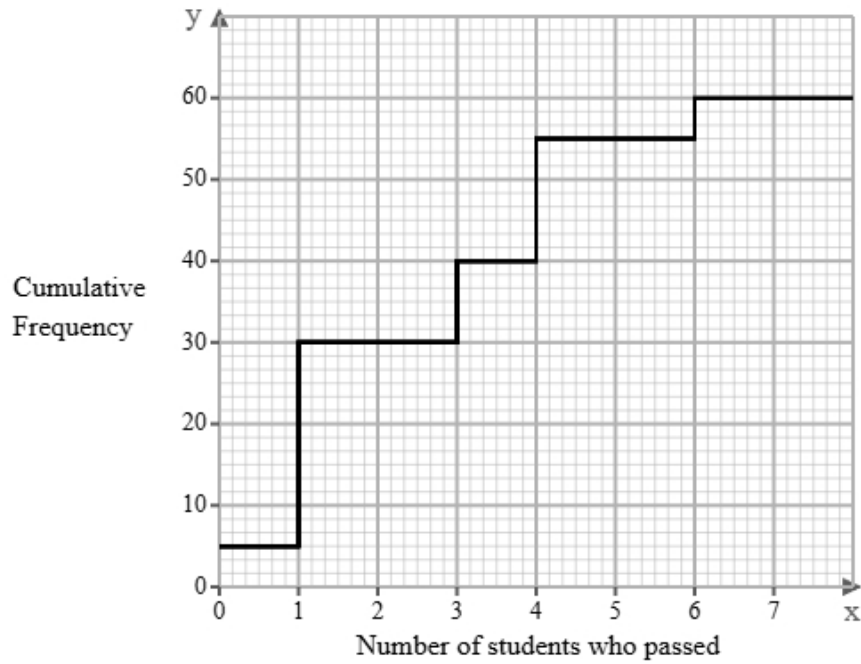
(a) Complete the probability tree diagram.

(2 marks)

(b) Find the probability that both of Emma's reviews are real.

(2 marks)

14 The cumulative frequency step polygon shows information about the number of students who passed a daily maths quiz over 60 days.



(a) Give a reason why a cumulative frequency step polygon has been used to display this data.

(1 mark)

(b) Find the number of days where there were:

- i) exactly 5 students who passed.
- ii) more than 5 students who passed.

(3 marks)

i) Exactly 5 students who passed: _____

ii) More than 5 students who passed: _____

(c) In 40 days fewer than x students passed.

Find the value of x

(1 mark)

(d) Peter believes the interquartile range of the number of students who passed is 8.

Explain why the interquartile range for this data cannot be 8.

(1 mark)
