



Cambridge International AS & A Level

CANDIDATE
NAME



CENTRE
NUMBER

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CANDIDATE
NUMBER

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MATHEMATICS

9709/51

Paper 5 Probability & Statistics 1

October/November 2024

1 hour 15 minutes

You must answer on the question paper.

You will need: List of formulae (MF19)

INSTRUCTIONS

- Answer **all** questions.
- Use a black or dark blue pen. You may use an HB pencil for any diagrams or graphs.
- Write your name, centre number and candidate number in the boxes at the top of the page.
- Write your answer to each question in the space provided.
- Do **not** use an erasable pen or correction fluid.
- Do **not** write on any bar codes.
- If additional space is needed, you should use the lined page at the end of this booklet; the question number or numbers must be clearly shown.
- You should use a calculator where appropriate.
- You must show all necessary working clearly; no marks will be given for unsupported answers from a calculator.
- Give non-exact numerical answers correct to 3 significant figures, or 1 decimal place for angles in degrees, unless a different level of accuracy is specified in the question.

INFORMATION

- The total mark for this paper is 50.
- The number of marks for each question or part question is shown in brackets [].

This document has **16** pages. Any blank pages are indicated.

[2]



[2]

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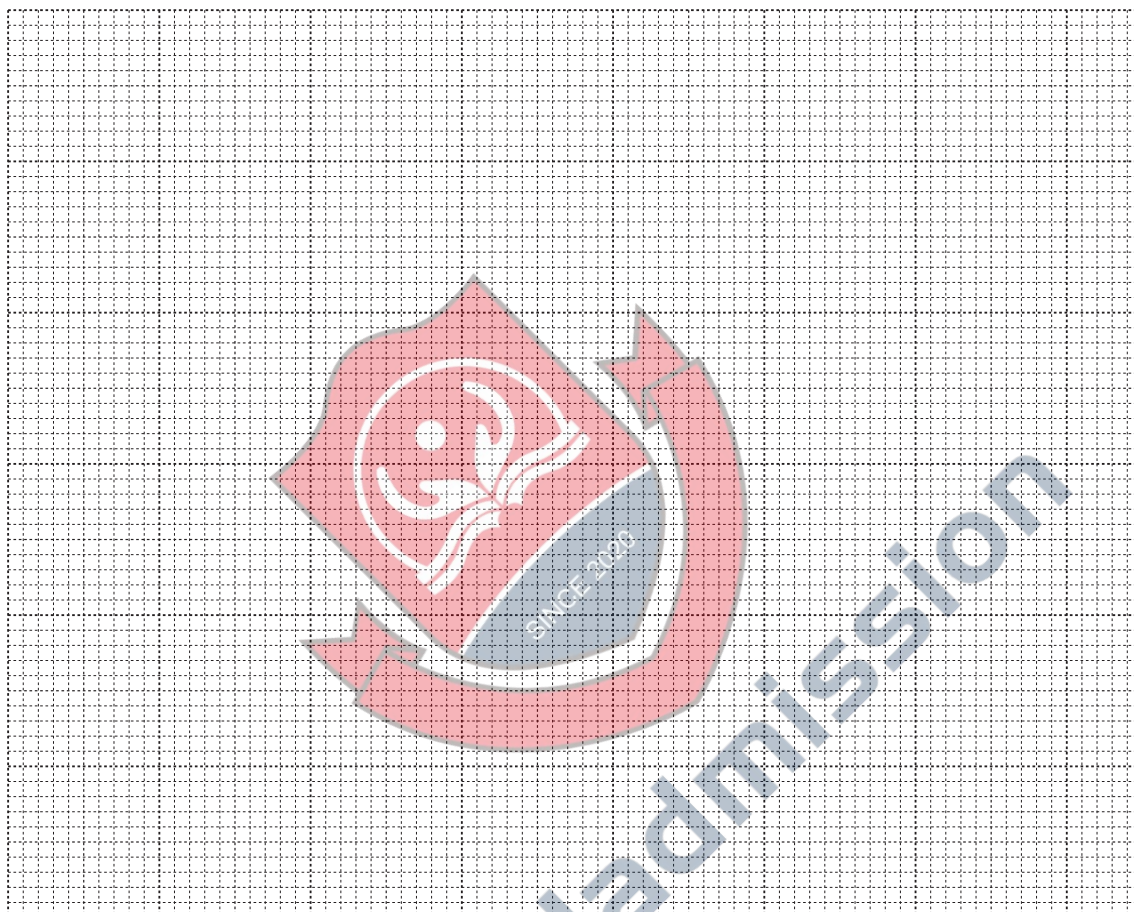


- 3 The time taken, in minutes, to walk to school was recorded for 200 pupils at a certain school. These times are summarised in the following table.

Time taken (t minutes)	$t \leq 15$	$t \leq 25$	$t \leq 30$	$t \leq 40$	$t \leq 50$	$t \leq 70$
Cumulative frequency	18	46	88	140	176	200

- (a) Draw a cumulative frequency graph to illustrate the data.

[2]



- (b) Use your graph to estimate the median and the interquartile range of the data.

[3]

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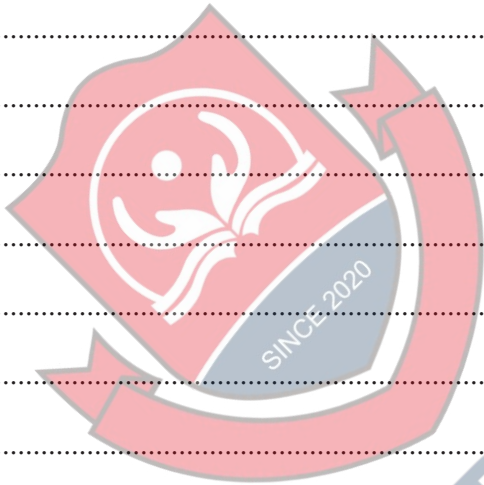
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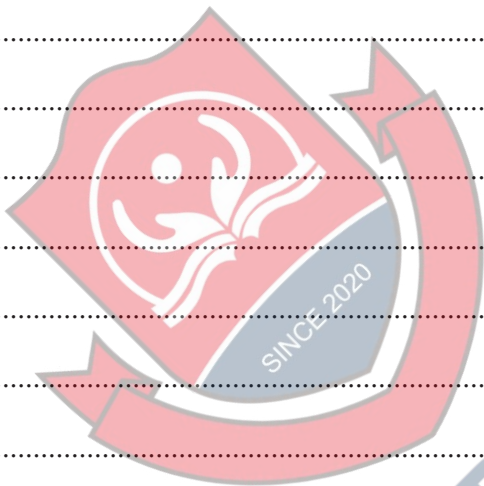
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- (a) Find the probability that a randomly chosen green apple weighs between 83 grams and 95 grams. [4]



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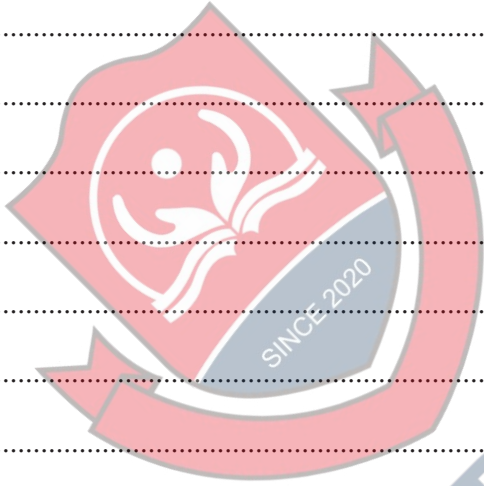


- Use a suitable approximation to find the probability that fewer than 105 of the chosen red apples weigh more than 80 grams. [5]



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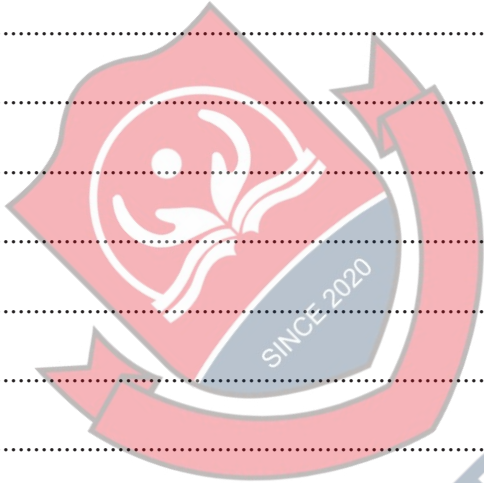
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The image features the logo of the University of Jeddah in the top left corner, which includes a red and white emblem with the text "SINCE 2020". A large, light blue watermark with the text "UJ Admission" is oriented diagonally across the entire page. The background is white with horizontal dotted lines.

If you use the following page to complete the answer to any question, the question number must be clearly shown.



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