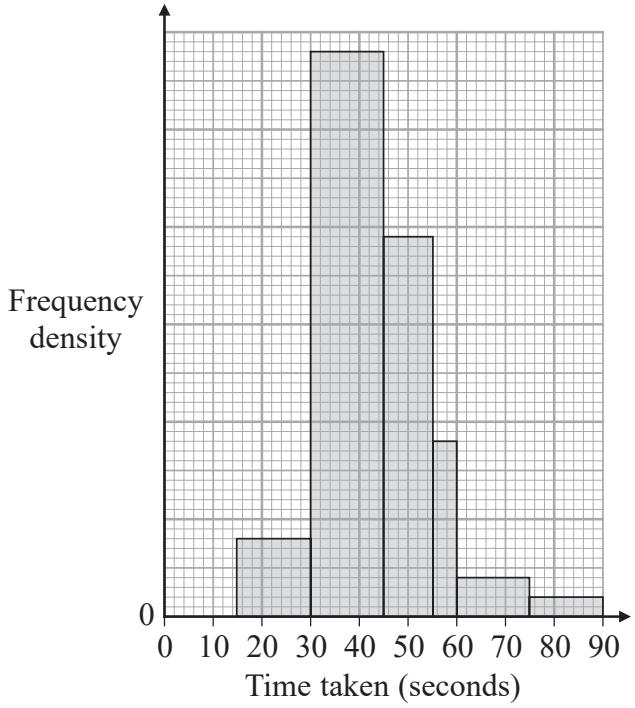
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2. The histogram shows the times taken, in seconds, by each of 260 people to complete a puzzle.



(a) Use the histogram to complete the frequency table for the times taken to complete the puzzle.

Time taken (seconds)	15–30	30–45	45–55	55–60	60–75	75–90
Frequency (f)	20	145			10	5
Time midpoint (t seconds)	22.5	37.5	50	57.5	67.5	82.5

(3)

Given that $\sum ft = 11\,087.5$ and $\sum ft^2 = 505\,718.75$

(b) find an estimate for

(i) the mean time taken to complete the puzzle,

(1)

(ii) the standard deviation of the times taken to complete the puzzle.

(2)

(c) Use linear interpolation to estimate the median time taken to complete the puzzle.

(2)

(d) Describe the skewness of these data. Give a reason for your answer.

(1)

Three of the 260 people are chosen at random.

(e) Estimate the probability that all 3 of their times are less than 36 seconds.

(4)

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Question 2 continued

(Total 13 marks)

Q2