



- 2 Lakeview and Riverside are two schools. The pupils at both schools took part in a competition to see how far they could throw a ball. The distances thrown, to the nearest metre, by 11 pupils from each school are shown in the following table.

Lakeview	10	14	19	22	26	27	28	30	32	33	41
Riverside	23	36	21	18	37	25	18	20	24	30	25

- (a) Draw a back-to-back stem-and-leaf diagram to represent this information, with Lakeview on the left-hand side. [4]

- (b) Find the interquartile range of the distances thrown by the 11 pupils at Lakeview school. [2]

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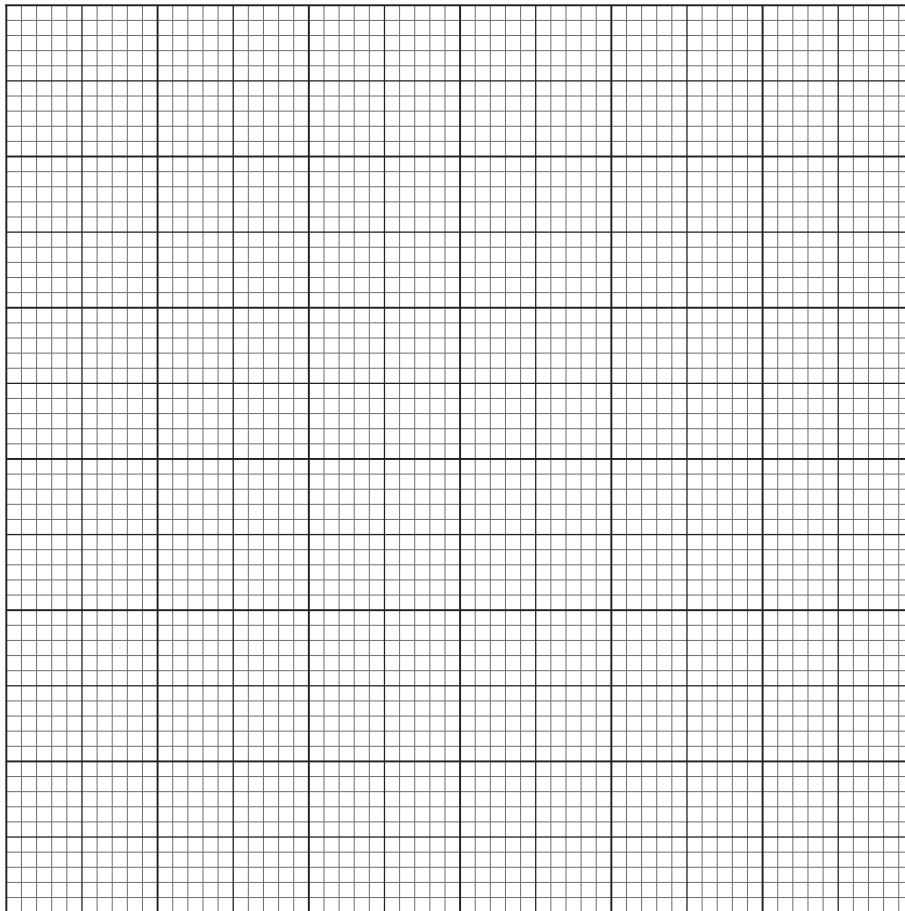


- 3 The times taken, in minutes, by 360 employees at a large company to travel from home to work are summarised in the following table.

Time, $t$ minutes	$0 \leq t < 5$	$5 \leq t < 10$	$10 \leq t < 20$	$20 \leq t < 30$	$30 \leq t < 50$
Frequency	23	102	135	76	24

- (a) Draw a histogram to represent this information.

[4]



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4 Raj wants to improve his fitness, so every day he goes for a run. The times, in minutes, of his runs have a normal distribution with mean 41.2 and standard deviation 3.6.

(a) Find the probability that on a randomly chosen day Raj runs for more than 43.2 minutes. [3]

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(b) Find an estimate for the number of days in a year (365 days) on which Raj runs for less than 43.2 minutes. [2]

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5 A security code consists of 2 letters followed by a 4-digit number. The letters are chosen from {A, B, C, D, E} and the digits are chosen from {1, 2, 3, 4, 5, 6, 7}. No letter or digit may appear more than once. An example of a code is BE3216.

(a) How many different codes can be formed? [2]

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(b) Find the number of different codes that include the letter A or the digit 5 or both. [3]

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Jim is practising for a competition and he repeatedly throws three darts at the board.

- (c) Find the probability that  $X = 1$  in at least 3 of 12 randomly chosen turns. [3]

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- (d) Find the probability that Jim first succeeds in hitting the bull’s-eye with all three darts on his 9th turn. [1]

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