

Estimating the Mean

Please write clearly in block capitals

Forename:

Surname:

Materials

For this paper you must have:

- mathematical instruments



You *can* use a calculator.

Instructions

- Use black ink or black ball-point pen. Draw diagrams in pencil.
- Fill in the boxes at the top of this page.
- Answer all questions.
- You must answer the questions in the spaces provided. Do not write outside the box around each page or on blank pages.
- Do all rough work in this book. Cross through any work you do not want to be marked.

Information

- The marks for questions are shown in brackets.
- You may ask for graph paper, tracing paper and more answer paper. These must be tagged securely to this answer book.

Advice

- In all calculations, show clearly how you work out your answer.

1 Anna records the speed of cars going past on a busy road.

(Level 5)

Speed s (mph)	Frequency
$0 < s \leq 30$	4
$30 < s \leq 40$	28
$40 < s \leq 50$	37
$50 < s \leq 60$	10
$60 < s \leq 70$	6

Use this table to estimate the average speed of the cars.

Give your answer to 2 significant figures.

[3 marks]

Answer _____ mph

Turn over for next question

- 2 Eric's favourite bag of sweets says there are approximately 55 sweets in each bag. (Level 5)
Eric does an experiment to see if this is true.

Number of sweets s	Frequency
$40 < t \leq 45$	12
$45 < t \leq 50$	18
$50 < t \leq 55$	23
$55 < t \leq 60$	2

Use this table to estimate the average number of sweets in each bag.

Give your answer to 2 significant figures.

[3 marks]

Answer _____ Sweets



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3 A class of students all run 5km.

(Level 5)

Their teacher records the time it takes them to finish.

Time t (minutes)	Frequency
$0 < t \leq 30$	15
$30 < t \leq 35$	16
$35 < t \leq 40$	40
$40 < t \leq 50$	23

Use this table to estimate the average time it took for students to finish the run.

Give your answer to 2 significant figures.

[3 marks]

Answer _____ minutes



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4 Siobhan measures the temperature of different spots in the river.

(Level 5)

Temperature t (<i>degrees</i>)	Frequency
$0 < t \leq 5$	2
$5 < t \leq 10$	5
$10 < t \leq 15$	8

Use this table to estimate the average temperature of the river

Give your answer to an appropriate degree of accuracy.

[3 marks]

Answer _____ *degrees*



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5 The following table displays the heights of children in Kevin's class.

(Level 5)

Height h (m)	Frequency
$1.5 < h \leq 1.6$	12
$1.6 < h \leq 1.7$	27
$1.7 < h \leq 1.8$	8
$1.8 < h \leq 1.9$	1

5(a) Use this table to estimate the average height of the students in Kevin's class.
Give your answer to an appropriate number of decimal places.

[3 marks]

Answer _____ m

5(b) Why is your answer to part (a) considered an estimate.

[2 marks]

Turn over for next question

- 6** Hannah wants to know the average diameter of cookies from her local bakery. She measures 50 cookies.

(Level 5)

Diameter d (cm)	Frequency
$10.0 < h \leq 10.5$	17
$10.5 < h \leq 11.0$	24
$11.0 < h \leq 11.5$	3
$11.5 < h \leq 12.0$	6

- 6(a)** What is the modal class?

[1 mark]

Answer _____

- 6(b)** Estimate the average diameter of the cookies.

[3 marks]

Answer _____ cm

End of questions