Representing data

Year 9 | Key Stage 3 | 13 questions, 39 marks

KS3 Maths topic practice

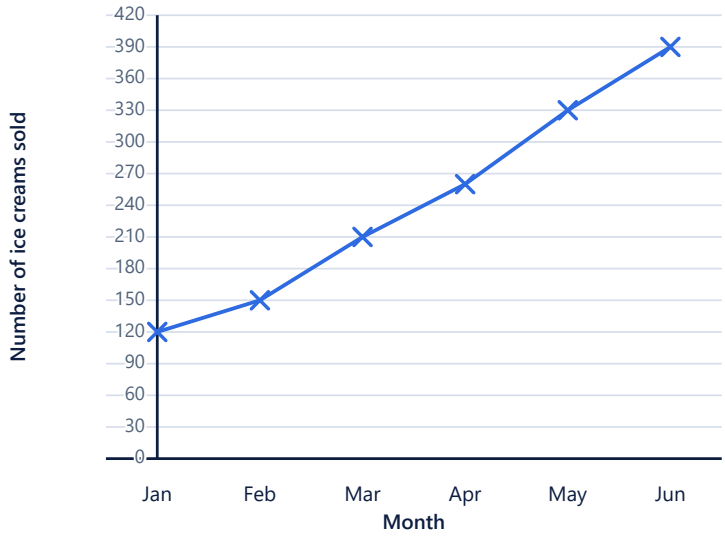
Scan for the solutions

Name: _____ **Date:** _____ **Score:** _____ **/ 39**

1 The time series graph shows the number of ice creams a kiosk sold each month from January to June.

a. Write down the number of ice creams sold in April.

b. Between which two consecutive months was the biggest increase in sales?



(2 marks)

Answer _____

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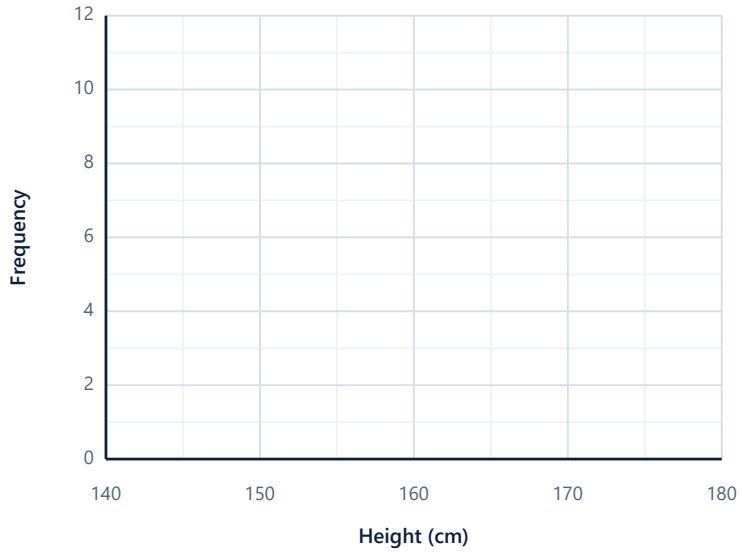
2 The table shows the heights, in centimetres, of 30 students.

Height (h cm)	Frequency
$140 < h \leq 150$	6
$150 < h \leq 160$	11
$160 < h \leq 170$	9
$170 < h \leq 180$	4

Draw a frequency polygon for this information.



(2 marks)

Answer _____

3 Choose the most suitable diagram for each set of data from this list.

pie chart scatter graph time series graph frequency polygon

a. The temperature in a classroom, taken every hour during a school day.

b. The height and the arm span of each of 20 pupils.

c. The favourite crisp flavours of Year 9, to show what proportion chose each flavour.

d. The finishing times of 60 runners in a fun run, grouped into classes.

(2 marks)

Answer _____

4 40 students each chose one sport. 15 chose football and 6 chose tennis. Ellie is going to draw a pie chart of the results.

a. Work out the angle Ellie should use for football.

b. Work out the angle Ellie should use for tennis.

(3 marks)

Answer _____

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5 Six people work at a sports shop on Saturdays. Here is what each of them was paid last Saturday.

£42 £45 £46 £48 £49 £190

a. Work out the mean pay.

b. Work out the median pay.

c. Which average best describes the pay of a typical worker? Give a reason.

(3 marks)

Answer _____

6 80 students each chose one club: Art, Music or Drama.

The two-way table shows some information about their choices.

	Art	**Music**	**Drama**	**Total**
Boys	14		9	35
Girls		18	11	
Total				80

Complete the two-way table.

(3 marks)

Answer _____

7 The table shows the number of members of a gym at the end of each year.

Year	**Members**
2021	2000
2022	2200
2023	2420

a. Show that the number of members increased by the same percentage each year.

b. Assuming this trend continues, predict the number of members at the end of 2024.

c. Give one reason why your prediction may not be reliable.

(3 marks)

Answer _____

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8 Pupils in two classes timed how long they took to finish a puzzle. The times for Class 9A are shown in the back-to-back stem and leaf diagram.

Class 9A	Stem	Class 9B
8 5 2	1	
7 3 3 1	2	
6 4 0	3	
1	4	

Key: 5 | 1 | 9 means 15 seconds for 9A and 19 seconds for 9B

Here are the times, in seconds, for the 11 pupils in Class 9B.

19 25 31 28 22 33 26 38 29 24 35

a. Complete the diagram by adding the times for Class 9B.

b. Work out the median and the range for each class.

c. Compare the times of the two classes.

(4 marks)

Answer _____

9 The table shows how long 40 Year 9 pupils spent on homework one evening.

Time (t minutes)	Frequency
$0 < t \leq 10$	4
$10 < t \leq 20$	7
$20 < t \leq 30$	12
$30 < t \leq 40$	17

a. Write down the modal class.

b. Write down the class that contains the median.

c. Work out an estimate for the mean time.

(4 marks)

Answer _____

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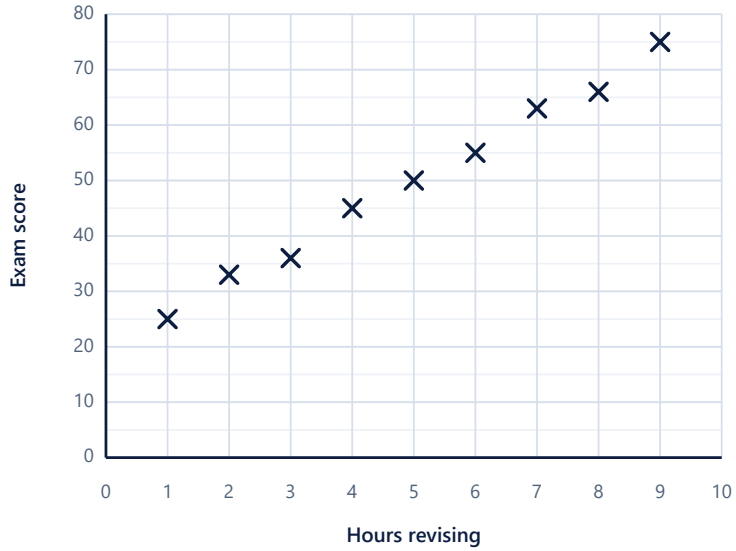
10 The scatter graph shows the number of hours each of 9 students spent revising and their scores in an exam marked out of 80.

a. Write down the type of correlation shown.

b. Draw a line of best fit on the scatter graph.

c. Use your line of best fit to estimate the exam score of a student who revised for 5.5 hours.

d. Amir revised for 20 hours. Explain why the line of best fit should not be used to estimate his score.



(4 marks)

Answer _____

EXTENSION QUESTIONS

11 The table shows the money taken by a school tuck shop in each term over three school years.

Term	Autumn 1	Spring 1	Summer 1	Autumn 2	Spring 2	Summer 2	Autumn 3	Spring 3	Summer 3
Takings (£)	150	120	90	162	126	99	171	135	105

a. Work out the 3-point moving averages.

b. Describe the trend in the takings.

(3 marks)

Answer _____

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12 The table shows the ages, a years, of the 60 members of a running club.

Age (a years)	Frequency
$10 < a \leq 20$	9
$20 < a \leq 30$	15
$30 < a \leq 40$	18
$40 < a \leq 50$	12
$50 < a \leq 60$	6

a. Complete a cumulative frequency table for this data.

b. Write down the class interval that contains the median age.

(3 marks)

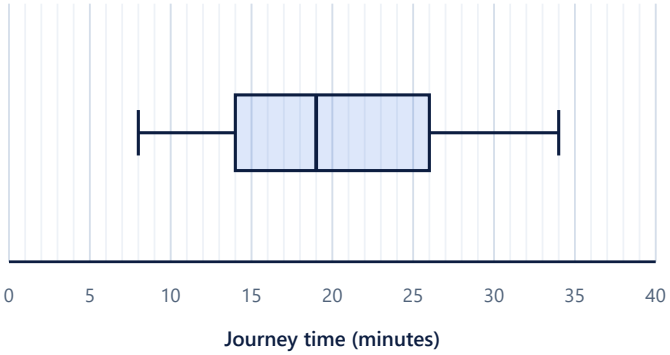
Answer _____

13 The box plot shows the journey times, in minutes, of 15 deliveries made by a courier.

a. Write down the median journey time.

b. Work out the interquartile range of the journey times.

c. Work out the range of the journey times.



(3 marks)

Answer _____

End of questions | Total 39 marks

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