Topic 9 Statistics 1 (Pre-TT) [36]

1.

The number of goals scored in 15 hockey matches is shown in the table.

Number of goals	Number of matches
1	2
3	1
5	5
6	3
9	4

Calculate the mean number of goals scored.

(Total 3 marks)

2.

The table shows the number of laptops sold in each of the first five months of 2012.

Month	January	February	March	April	May
Number of laptops	2190	2220	2280	2250	2280

(*a*) Work out the 3-point moving averages for the first five months of 2012.

(2)

The 3-point moving average of the number of laptops sold in April, May and June of 2012 was 2300.

(*b*) Work out the number of laptops sold in June 2012.

(2)

(*c*) Describe what the moving averages show about the trend in the number of laptops sold in the shop in the first six months of 2012.

(1)

3. **Non-calculator**

Walkden Reds is a basketball team.

At the end of 11 games, their mean score was 33 points per game.
At the end of 10 games, their mean score was 2 points higher.

Jordan says,

"Walkden Reds must have scored 13 points in their 11th game."

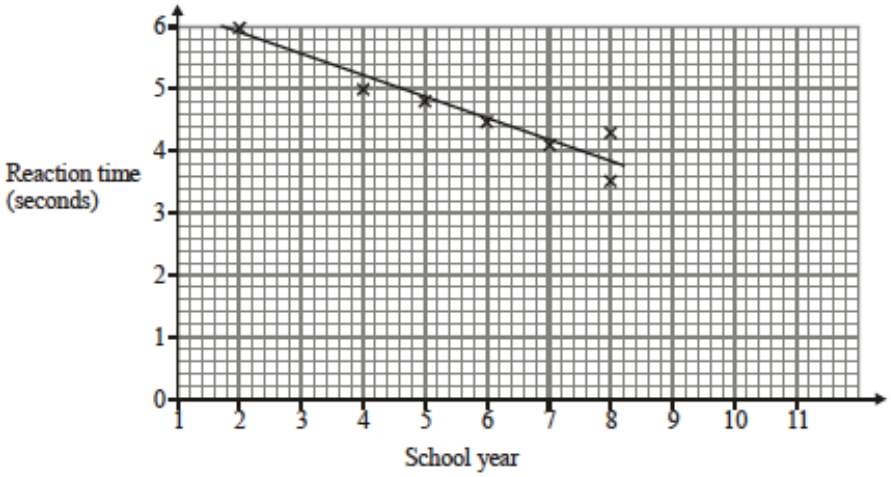
Is Jordan right?
You must show how you get your answer.

(Total 3 marks)

4. ***N.B. (b) Should read "Use the line of best fit…in school year 3"***

The scatter graph shows the school year and the reaction time of seven people who took part in the same test.

The line of best fit is shown.



(a) State the type of correlation shown.

(1)

(b) Use the line of best fit to estimate the reaction time of a person in school year 2.

(1)

(c) Explain why it would not be sensible to use the line of best fit to estimate the reaction time of a person in school year 11.

(1)

(Total 3 marks)

5.

The number of minutes that trains arrived late at a station is shown in the table below.

Number of minutes late, t	Frequency	Midpoint
$0 < t \leq 10$	16	
$10 < t \leq 20$	10	
$20 < t \leq 30$	11	
$30 < t \leq 40$	8	
$40 < t \leq 50$	5	

(a) Copy and complete the midpoint column and use it to calculate an estimate of the mean number of minutes that trains arrived late.

(3)

(b) Which class interval contains the median number of minutes that trains arrived late?

(2)

(Total 5 marks)

6.

Karin is collecting data about the number of brothers and the number of sisters of the people in her class.
Karin's results are given in the two-way table.

		Number of brothers			
		0	**1**	**2**	**3**
Number of sisters	**0**	6	7	1	2
	1	4	3	0	1
	2	1	2	1	0
	3	1	1	0	0

(a) How many people have one brother?

(2)

(b) How many people have more brothers than sisters?

(2)

(c) There are 30 people in Karin's class.

What is the probability that a randomly chosen person from her class has the same number of brothers and sisters?

(2)
(Total 6 marks)

7.

Ten workmates run in a marathon.
The table shows their age in years and their time in minutes.

Age (years)	20	22	25	32	35	43	45	52	55	60
Time (minutes)	280	265	300	310	295	320	335	325	355	340

(a) Plot the data as a scatter graph.

(2)

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

(1)

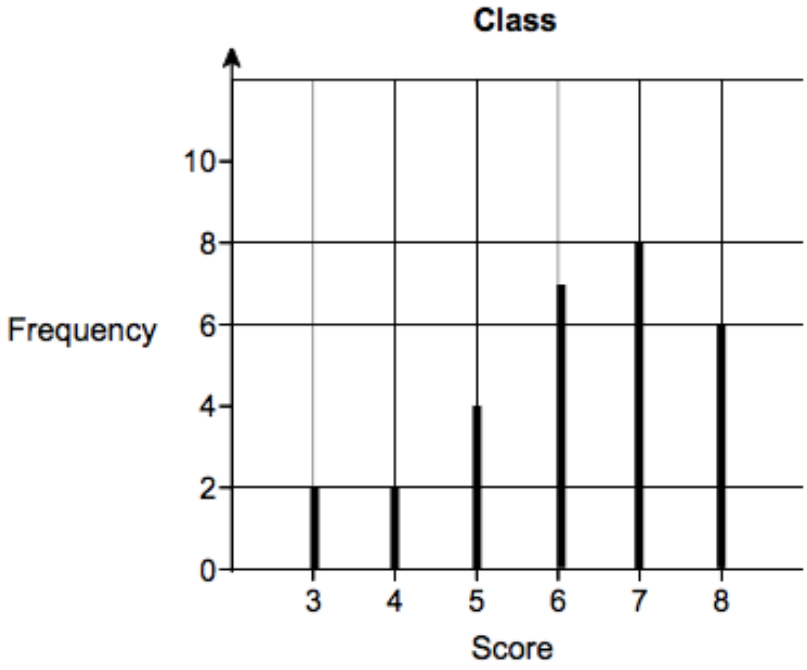
(c) Describe the relationship between the age and the time for the workmates.

(1)
(Total 4 marks)

8. **Non-calculator**

Students in a class took a spelling test.

The diagram shows information about the scores.



Lucy is one of the 29 students in the class.

Her score was the same as the **median** score for her class.

Work out her score.

[2 marks]

9.

Here is some information about the number of books read by a group of people in 2014

One of the frequencies is missing.

Number of books	Frequency	Midpoint	
0 – 4	16	2	
5 – 9		7	
10 – 14	20	12	
15 – 19	10	17	

Midpoints are used to work out an estimate for the mean number of books read.

The answer is 8.5

Work out the missing frequency.

[5 marks]