2024 LCHL Paper 2 Q1

This section is to be completed having corrected the question. **Enter your score in the box above ↑.**

Thoughts (Easy/ Hard, State the Topic, Links to other Topics, Similar Questions?)

What formulae or rules did I need? Is there anything I should learn off?

Is there anything I still don't understand? What do I need to revise? Should I return to this question?

▶ 2024 LCHL Paper 1 – Question 1 (a)

A group of 22 students was tested to see how far, in metres, each of them could swim without stopping for a rest. The results of the testing are shown in the ordered stem and leaf plot below.

Four of the entries have been replaced with the letters a, b, c, and d.

2	b	2	7			
3	a	4	4	5	8	
4	0	1	d	5	6	9
5	2	3	7	7	8	
6	1	8	c			

Key: $2|7 = 27$ metres

(i) The **mode** of the data is 34 metres. Use this to write down the value of a.

(ii) The **range** of the data is 49 metres. Use this to find the value of b and the value of c.

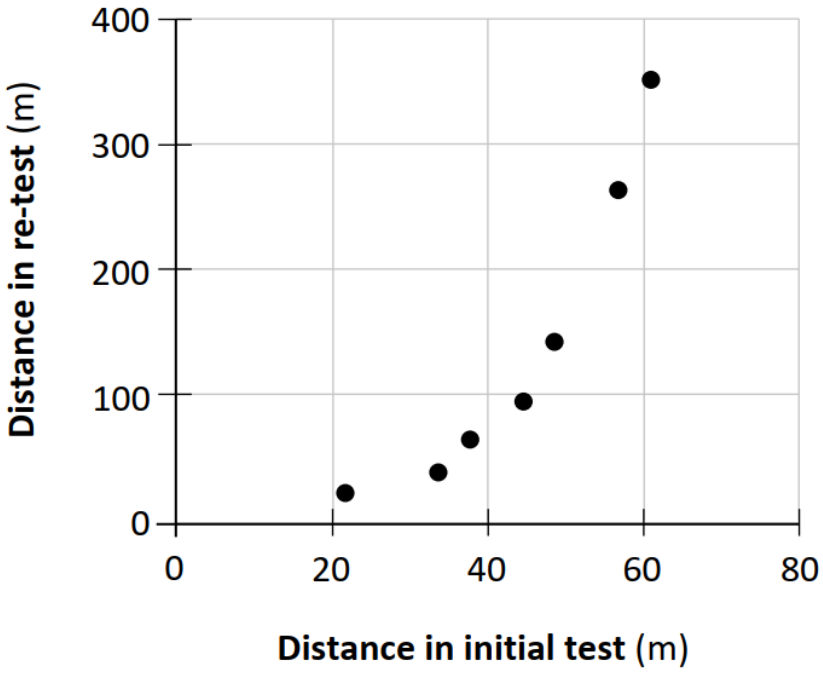
(iii) The **median** of the data is 43·5 metres. Use this to find the value of d.

Seven of the 22 students took swimming lessons.

They were re-tested after the lessons, to see how far they could now swim without stopping.

The table and graph below show the results of the initial test and of the re-test for these students.

Distance in initial test (m)	Distance in re-test (m)
22	25
34	40
38	65
45	96
49	142
57	262
61	350



(b) How would you best describe how the results changed for these students, from the initial test to the re-test?

(c) The swimming coach worked out r, the correlation coefficient between the distance in the initial test and the distance in the re-test, for these seven students.

Find the value of r, correct to 4 decimal places.

$r =$ _____