Grade 7 Data Management Test

1. Grade 7 students completed 100 mental math questions in the weekly MAD MINUTE math test. The number of errors that each student made is recorded below

> 2, 6, 8, 1, 0, 12, 18, 22, 14, 10, 4, 0, 20, 17, 25, 33, 24, 11,
> 6, 9, 13, 12, 5, 7, 16, 3, 0, 27, 28, 36, 22, 18, 10, 15, 6, 3,
> 20, 11, 9, 0, 5, 35, 0, 19, 34, 29, 2, 40, 26, 14, 4, 8, 23, 31,
> 42, 0, 30, 17, 26, 0

Complete the frequency table for these data.

Mad Minute Test Errors		
Number of Errors	**Tally**	**Frequency**
0 – 4		
5 – 9		
10 – 14		
15 – 19		
20 – 24		
25 – 29		
30 – 34		
35 – 39		
40 – 44		

How many students wrote the test? How do you know?

b)

c) What type of graph would best display the data in the table? Explain.

d) Draw the graph you selected in part c.

e) What else do you know by looking at your graph?

2. Here are the fitness challenge jumping jacks in a minute results for a grade 7 physical education class.

> 19, 33, 37, 24, 62, 41, 38, 48, 26, 36, 33, 40, 57, 29, 36, 22, 31, 18, 42, 49, 61, 35, 27, 36, 50, 34, 31, 40, 29, 53, 27, 35, 64, 58, 23

a) Complete a stem-and-leaf plot for scores.

Stem	Leaf

b) What is the title for your stem-and-leaf plot?

c) What is the range of the scores?

d) Find the median score and mode score.

e) Which measure of **central tendency** (mean, median, or mode) best describes the average fitness challenge jumping jacks in a minute? Explain.

3.

Yearly Sales of Lamps	
Year	**Sales ($)**
1995	341 000
1996	350 000
1997	356 000
1998	368 000
1999	373 000
2000	379 000
2001	389 000
2002	392 000
2003	399 000

a) Name two types of graphs that could be used to display the above data. Which would be a better choice and why? Explain.

b) Draw a graph to display the data so that the yearly sales appear to be increasing dramatically. Explain how your graph shows this and how it might be used.

c) Draw an accurate representation of the data. Explain how your graph shows this.

d) Predict the yearly lamp sales for 2005. How did you use the graph to make this prediction?

4. A student received these marks on 7 math tests: 91%, 75%, 95%, 80%, 83%, 86%, and 68%.

What mark will the student need on the 8th test to make each following statement true?

Explain your thinking in each case.

a) The mean of the tests is 84%.

b) The mode of the tests is 86%.

c) The median of the tests is 84%.

5. **a)**

i) Explain why this survey question might produce a **biased** response.

NHL hockey is boring. Do you think playing hockey is more fun than watching hockey?

Yes _____ No_____

ii) Rewrite the survey question so it does not produce a biased response.

b) Are primary data or secondary data collected in each situation? How do you know?

i) A student used E-STAT to find the average wages of various occupations in Canada.

ii) A student measured the perimeter of a garden to find how much fencing would be needed.