

Nelson Maths 9 for the CSF II

Homework and Assessment Sheets

Summarising data

CD 9-3

Name: _____ Class: _____

Due date: _____ Parent's signature: _____

Level 5					/10	Level 6					/20

Part A: Level 5

I have collected this data on the school basketball team.

	Height (cm)	Year level	Position	Points	Points per game	Free throws	Free throw %
Caroline	173	12	G	358	13.3	73/98	74
Rachael	185	12	C	83	3.1	14/21	67
Kiersten	173	12	F	391	14.5	71/92	77
Kara	168	11	G	58	2.1	9/16	56
Christina	185	11	C	226	8.4	44/74	59
Anya	185	10	C	4	4.0	0/0	0
Erin	173	10	F	39	1.4	8/14	57
Krystle	170	10	G	17	.9	1/2	50
Tanya	170	10	G	158	5.9	10/18	56
Yvonne	173	10	F	45	5.6	6/9	67
Liz	173	10	F	78	2.9	9/11	82
Mindy	173	10	G	23	3.3	4/9	44

Fill in this table.

1	Total points for team	
2	Mean height (cm)	
3	Median height (cm)	
4	Range of heights (cm)	
5	Modal height (cm)	
6	Upper quartile height (cm)	
7	Lower quartile height (cm)	
8	Mean height of Year 10 players (cm)	
9	Mean height of Year 11 and 12 players (cm)	

- 10 On the basis of these figures, are Year 10 students generally shorter than Year 11 and 12 students? Explain your answer. _____

Part B: Level 6

1 What is the interquartile range of the heights of the previous players? _____

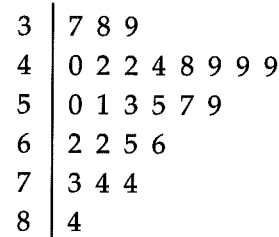
The coach wanted some further analysis done on the basketball team. Complete the table.

2	Total number of games played by team	
3	Mean points by team per game	
4	Team mean free throw percentage	
5	Mean total points scored by forwards	
6	Mean total points scored by guards	

(To work out these answers you will need to think about how to use the data.)

7 Do the forwards or the guards score the most points for the basketball team? _____

The scores for each of the games played by the boys basketball team have been recorded in a stem-and-leaf plot.



8 Which of the scores can be considered to be an outlier (unusually high or low). _____

9 Explain your answer.

Use the stem-and-leaf plot to find:

10	Mean team score	
11	Median team score	
12	Upper quartile score	
13	Lower quartile score	
14	Interquartile range	
15	Modal score	
16	Range of scores	

17 Which team scored the most points, the boys team or the girls team? _____

Find one variable from the table of basketball data that can be classified as each of the following.

18 qualitative/nominal _____

19 quantitative/continuous _____

20 quantitative/discrete _____

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Six people meet at a party. How likely is it that at least two of them have the same star sign?

(If you can't calculate an answer, you could simulate the problem with twelve playing cards.)

Vocabulary

Write the mathematical meaning of:

Population _____

Variable _____

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Homework and Assessment Sheets

Processing data

CD 9-4

Name: _____ Class: _____

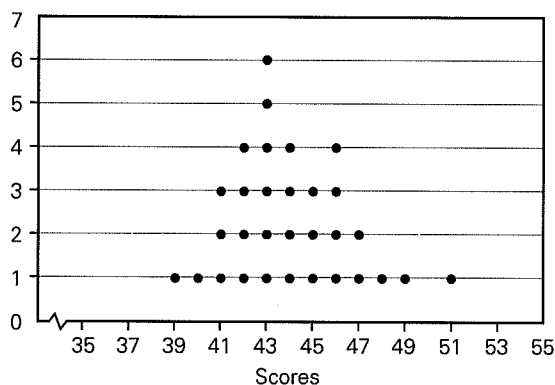
Due date: _____ Parent's signature: _____

Level 5					/10	Level 6										/20					

Part A: Level 5

The scores of the competitors in a nine-hole golf tournament were recorded in the dot plot below. Find the following summaries of the data.

1	Number of competitors	
2	Modal score	
3	Median score	
4	Mean score	
5	Range of scores	
6	The lower quartile	
7	The upper quartile	
8	The interquartile range	



9 Which of these summaries are measures of centrality? _____

10 Which of these summaries are measures of spread? _____

Part B: Level 6

The school basketball team has recorded these scores from its games over the season.

For	23	58	35	48	57	23	28	48	58	64	22	41	59
Against	28	47	21	37	15	27	52	37	39	22	42	46	30
For	10	38	44	47	39	57	34	51	43	64	47	51	43
Against	62	33	45	25	41	58	48	34	26	18	35	55	61

1 to 4 Display these scores as ordered back-to-back stem-and-leaf plots (2 marks each).

School team	Opposition team

- 5 What was the school team's win:loss ratio? _____
- 6 Compare the win:loss ratio with the back-to-back stem-and-leaf plot.

Complete the table for the data for the school team.

7	Median score	
8	Mean score	
9	Range of scores	
10	Lower quartile	
11	Upper quartile	
12	Interquartile range	

Complete the table for the data for the opposing teams.

13	Median score	
14	Mean score	
15	Range of scores	
16	Lower quartile	
17	Upper quartile	
18	Interquartile range	

Use the summary statistics from the two tables to offer advice to the coach of the school basketball team.

- 19 _____
- 20 _____
- _____

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Morse Code uses dots and dashes (• • - -).
At most, four dots/dashes are used to represent a character.
How many different characters are possible in Morse Code?

Write the mathematical meaning of:

Frequency _____

Rank _____

Vocabulary

Nelson Maths 9 for the CSF II

Homework and Assessment Sheets

Interpreting data

CD 9-5

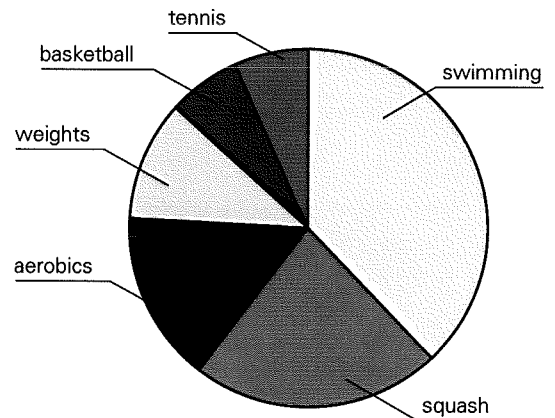
Name: _____ Class: _____

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Level 5										Level 6									
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Part A: Level 5

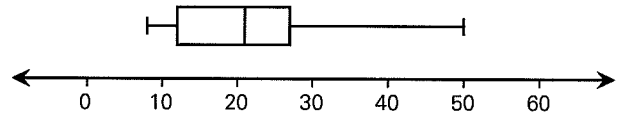
The management has recorded the number of people who participate in the different activities of the sports centre as a pie chart.



- 1 What two activities had the same number of participants? _____
- 2 What activity was most popular? _____
- 3 If 150 played basketball, how many people lifted weights? _____

Fill in this table for the box-and-whisker plot on the right.

4	Median score	
5	Minimum score	
6	Maximum score	
7	Range of scores	
8	Lower quartile	
9	Upper quartile	
10	Interquartile range	



Part B: Level 6

The weights of 50 footballers are recorded in the frequency table shown.

- 1 In which class interval does 75 kg belong? _____
- 2 A statistician described the frequency distribution as 'bimodal'. What does this mean? _____
- 3 What reason can you give for the weights being bimodal? _____

Weight interval	Frequency
70- <75	7
75- <80	9
80- <85	11
85- <90	6
90- <95	6
95- <100	9
100- <105	1
105- <110	1

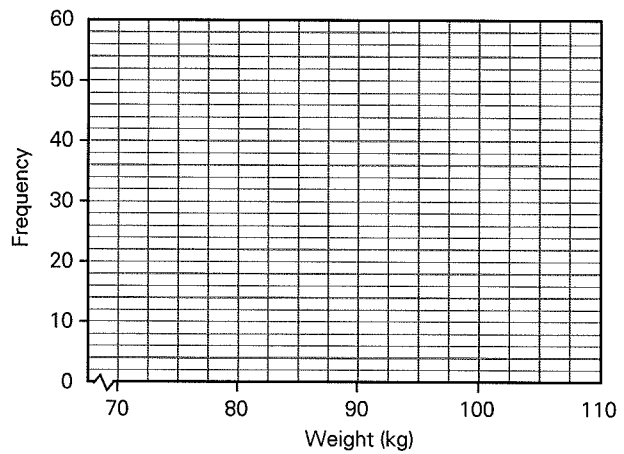
4 to 7 Use the data in the frequency table for weights of footballers to complete a cumulative frequency table (4 marks).

Weight interval	Cumulative frequency
<75	
<80	
<85	
<90	
<95	
<100	
<105	
<110	

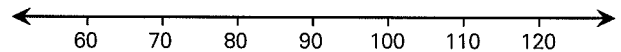
8 to 11 For the data in the cumulative frequency table, plot an ogive (or cumulative frequency graph) (4 marks).

Use the ogive to fill in the following table.

	Minimum weight (kg)	70
	Maximum weight (kg)	110
12	Median weight (kg)	
13	Lower quartile (kg)	
14	Upper quartile (kg)	
15	Interquartile range (kg)	



16 to 20 Use the five summary statistics in the table to draw a box-and-whisker plot (5 marks for all values correctly plotted).



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When I get bored driving, I look at the number plates of passing cars and see if any of them make recognisable three-letter words. How likely is it that the number plate forms a three-letter word?

You could run a simulation using a random number generator, or cards with letters on them, to estimate an answer to this question.

Vocabulary

Write the mathematical meaning of:

Measures of spread _____

Measures of centrality _____