Nelson Maths 9 for the CSF II
Homework and Assessment Sheets

Collecting data — CD 9-1

Name: _____ **Class:** _____

Due date: _____ **Parent's signature:** _____

Level 5 /10	Level 6 /20

Part A: Level 5

Use *two* of the following words to describe the type of variable in each question.

qualitative, quantitative, discrete, continuous, ordinal, nominal

1 height of a tree _____

2 hair colour _____

3 number of stars awarded to a movie _____

4 number of goals scored in a hockey game _____

You have been asked to prepare a survey of your class about the service at the lunch shop. You have to ask questions that will produce different types of data. Write questions to produce:

5 qualitative ordinal data _____

6 quantitative discrete data _____

7 quantitative continuous _____

8 qualitative nominal _____

A survey of Year 9 students showed that 73% of students played no sport out of school. Write two more questions, one qualitative/nominal and one qualitative/ordinal, that could be asked to find out why.

9 _____

_____

_____

10 _____

Part B: Level 6

Which method of gathering data, sample or census, would be most appropriate for each of these?

1 Selecting the government of a country. _____

2 Deciding whether old people should have driving licences. _____

3 Deciding whether uranium should be mined. _____

4 Testing the roadworthiness of cars. _____

5 Finding the percentage of Australians born overseas. _____

6 Finding the approval rating of your local council. _____

Samples are required for these surveys. Decide whether the sample is random or not. Give one reason why the survey may be biased.

7 To survey underage drinking, a nightclub was chosen from a telephone directory and an age check done on the patrons. _____

8 To survey a school's rating among parents of students, 100 names were chosen at random and a questionnaire posted home; 75% of the 25 responses approved of the school's teaching practices.

_____

9 To survey the use of public transport, shoppers were interviewed at the local shopping centre.

_____

10 To predict the result of the next election, 1000 people were chosen at random from the telephone directory and asked their preferences between the two major parties.

_____

A stratified random sample of 50 students is to be taken from a junior secondary school. Fill in the table showing the number of students to be chosen from each year level.

	Year level	Number in level	Number in sample
11	7	223	
12	8	242	
13	9	199	
14	10	186	

15 Of the 258 girls attending my school, only 27% play sport out of school. If I want to survey a stratified random sample to find out why so few play sport, how many should I survey? _____

The random number generator on your calculator can be used to make random selections from a population. How would you use it to:

16 simulate the toss of a coin? _____

17 choose an answer on a multiple-choice question with five answers?

_____

18 select the winners in the football tipping competition?

_____

19 choose a representative from your class? _____

_____

20 choose your six lotto numbers? _____

_____

Puzzler

Most accidents occur within 5 km of the driver's home.

Does this mean you are much safer once you are 5 km away from your home?

Vocabulary

Write the mathematical meaning of:

Census _____

Sample _____

Presenting data

CD 9-2

Name: _____ **Class:** _____

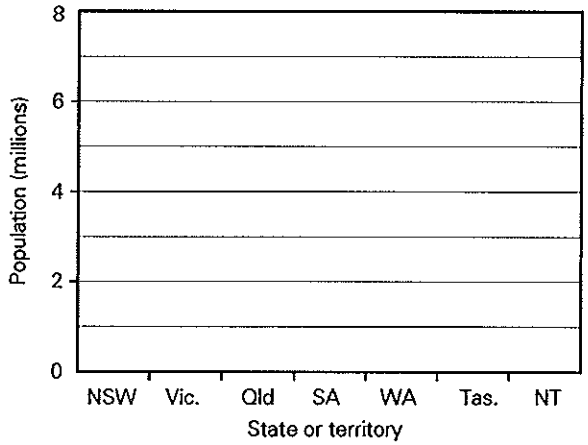
Due date: _____ **Parent's signature:** _____

Level 5 /10	Level 6 /20

Part A: Level 5

The table below shows the population of each of the states of Australia at the time of the 1996 census.

1 to **3** Draw a column graph (1 mark) with columns of the correct height (2 marks).



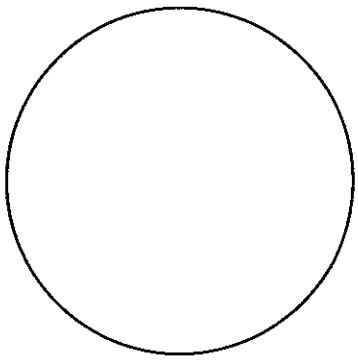
State	Population	Percentage	Angle
NSW	6 038 696		
Vic.	4 373 520		
Qld	3 368 850		
SA	1 427 936		
WA	1 726 095		
Tas.	459 659		
NT	195 101		

To make a pie or sector graph of state populations, you must first divide the circle into appropriate sectors.

4 and **5** Fill in the relative percentages in the table (2 marks).

6 and **7** Complete the table by filling in the angles (2 marks).

8 to **10** Draw a pie or sector graph with accurate sectors (2 marks) and an appropriate key (1 mark).

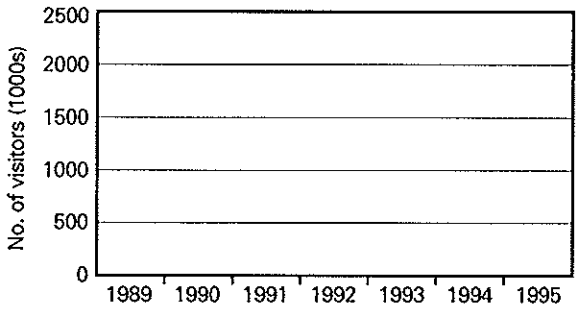


Part B: Level 6

International visitors to Australia are asked the purpose of their visit. Some of their answers are given in the table below.

	1989	1990	1991	1992	1993	1994	1995
Holiday	1 033 700	1 153 900	1 327 500	1 489 000	1 730 900	1 933 400	2 047 800
Visiting relatives	410 600	407 100	426 600	440 000	475 200	540 600	631 600

1 to **5** Display the data as a multiple column graph (1 mark) with columns of correct height (4 marks).



6 What is the percentage increase from 1989 to 1995 in the number of holidayers?

_____

7 Compare the increase in holidayers with the increase in people visiting relatives.

_____

The heights (cm) of 50 footballers are recorded.

185 186 185 189 183 180 187 184 194 183 199 173 184 196 188 194 198 197 193
180 178 180 193 183 184 191 193 180 193 185 186 175 184 193 192 179 183 178
184 181 197 180 187 177 179 178 196 186 182 179

8 What type of variable is height?

_____

9 and **10** Arrange the data into a frequency table with intervals 170 to <175, 175 to <180, etc. (1 mark for intervals and 1 mark for frequencies).

Class interval	Frequency	Relative frequency

11 and **12** Complete the relative frequency column in the table (2 marks).

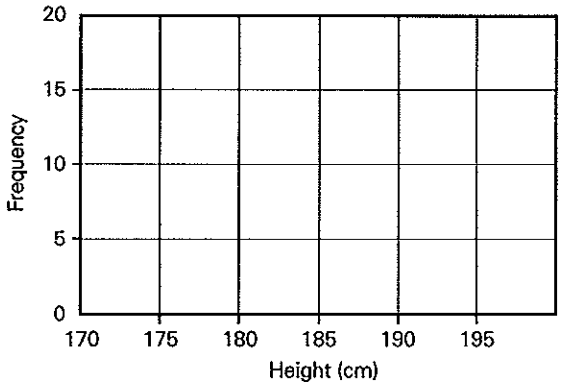
13 What proportion of footballers are ≥195 cm? _____

14 What proportion of footballers have heights that are at least 180 cm tall and less than 190 cm? _____

15 What percentage of footballers are less than 185 cm tall? _____

16 to **18** Display the frequency data as a histogram (1 mark) with columns of correct height (2 marks).

19 and **20** Add a frequency polygon to the histogram (2 marks).



Puzzler

The editor of my newspaper has asked me to interview a typical family for a feature article. I remember that I learned in mathematics classes that average could be mean, median or mode.

Can I use any of these to select the typical family? Explain.

Vocabulary

Write the mathematical meaning of:

Quantitative _____

Qualitative _____