

Topic test 9

Collecting and presenting data

- Time allowed: 45 minutes.
- 14 questions (100 marks)

Name: _____

1 (12 marks) A group of people was surveyed on the number of TV sets they had in their homes. The results were:

1 1 1 1 2 1 1 3 2 5
1 1 2 1 2 1 4 1 2 0

a Complete this frequency table for the data.

Score	Tally	Frequency
0		
1		
2		
3		
4		
5		
Total		

- b** Where are the scores clustered?
- c** How many people had 1 TV set?
- d** What percentage of people had 2 TV sets?
- e** Construct a divided rectangular bar graph for this data.

2 (2 marks) Which one of these is an example of categorical data?

- A temperature of a town
- B exam mark
- C number of bedrooms in a home
- D brand of toothpaste

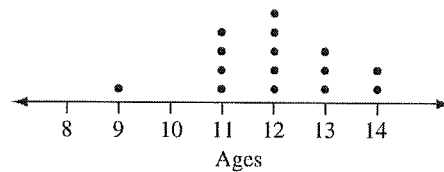
3 (2 marks) In an Internet survey, anyone can visit a particular website to vote for their favourite TV station. Give one reason why this survey's sample may be biased.

4 (8 marks) The heights (in centimetres) of 24 students are displayed in the stem-and-leaf plot below.

14	4 4 5 8 9
15	0 0 1 3 4 4 5 6 9
16	0 1 1 1 3 3 5 5 7 7

- a** What is the height of the shortest person?
- b** What is the range?
- c** What is the most frequent height?
- d** What percentage of students are taller than 160 cm?

5 (8 marks) This dot plot illustrates the ages of the members of a scout group.



- a** How many are there in the scout group?
- b** What is the age of the oldest member?
- c** What is the mode?
- d** How many members are over 12 years old?

6 (6 marks) Which method of gathering data — sample or census — is more suitable for each of the following?

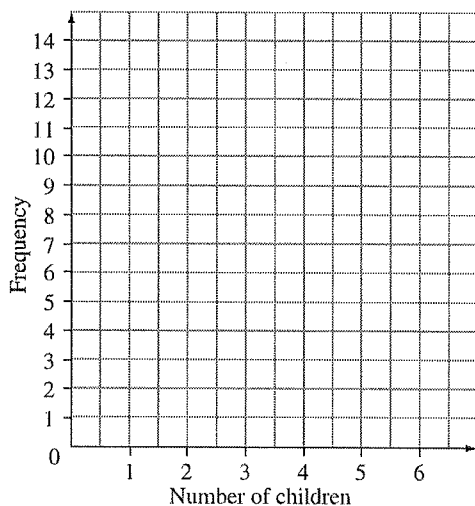
- a** Finding the number of people in Sydney who speak a second language.
- b** Testing the life of a brand of mobile phone battery.
- c** Finding the most popular TV program viewed at 7:00pm weeknights.

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7 (8 marks) A group of students was surveyed on the number of children in their families. The results are presented in the frequency table below:

No. of children	Frequency
1	5
2	10
3	14
4	7
5	4
6	3

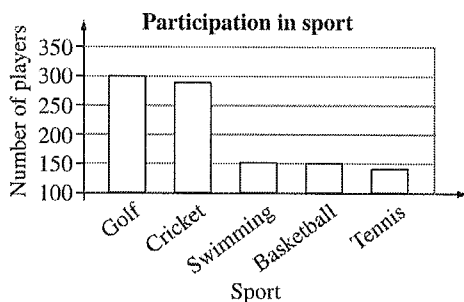
- a** How many students were surveyed?
- b** Where are the scores clustered?
- c** Draw a frequency histogram and polygon for this data.



8 (2 marks) Which one of these is an example of continuous quantitative data?

- A** eye colour **B** dress size
C heartbeat rate **D** length of car

9 (3 marks) Explain what is misleading about this graph and describe what must be done to correct the problem.



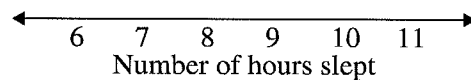
10 (11 marks) A group of students was surveyed today on the number of hours they slept last night. The results were:

9 8 7 9 6 7 9 10 8 10 7 6
 11 10 8 9 9 8 7 10 10 8 9 9

a Complete this frequency table for the data.

Score	Tally	Frequency
6		
7		
8		
9		
10		
11		
Total		

b Display this data on a dot plot.



- c** How many students were surveyed?
- d** How many students slept for 8 hours?
- e** What fraction of students slept for 7 hours?

11 (12 marks) The exam marks of a Year 8 class are shown in the stem-and-leaf plot below:

Boys		Girls
3	2	
	3	
8 6 6	4	0 9
9 6 5 3 3	5	3 3 4 5
4 4	6	3 8 9
	7	4 6 6 6 8
5 0	8	

- a** Are there more boys or girls in this class? Show working.
- b** What was the outlier mark?
- c** What was the highest mark and was it scored by a boy or a girl?

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d Which group has the greater range of marks: boys or girls?

e What was the mode mark for the girls?

12 (10 marks) The number of points per game scored by a basketball team during a season are as follows:

**58 64 35 82 77 57 68 72 40 88 79 59
65 44 72 81 77 49 73 67 82 71 57 56
48 79 84 62**

a Construct an ordered stem-and-leaf plot to display the data.

3	
4	
5	
6	
7	
8	

b What was the highest score?

c Which score was an outlier?

d What percentage of games had fewer than 50 points scored?

13 (8 marks) The weights (in kilograms) of 20 students were measured.

**88 68 73 81 69 72 74 80 69 63
77 85 72 81 70 79 74 63 75 76**

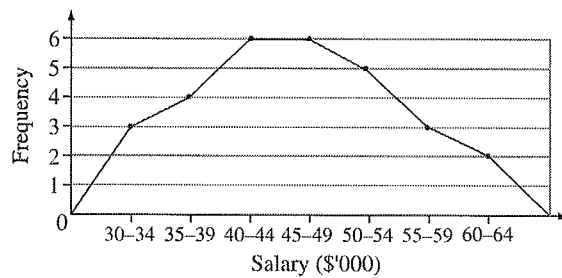
a Complete this frequency table for the data.

Class	Class centre	Tally	Frequency
60–64			
65–69			
70–74			
75–79			
80–84			
85–89			
Total			

b Which class is the modal class?

c How many students weighed less than 75 kg?

14 (8 marks) This frequency polygon shows the salaries of employees in a company.



a What were the modal classes?

b What is the class centre of the \$55 000–\$59 000 class?

c How many earned \$55 000 or more?

d How many people work for the company?

END OF TEST.

Use the rest of the page and the back for extra working space.