DISPLAYING DATA

3 Use this data set for the following questions.

blonde, brown, blonde, blonde, brown, red, red, blonde, brown, brown, brown, red, red, brown, blonde, red, blonde, blonde, brown, brown, red, blonde, brown, blonde, brown.

(a) Complete a frequency table and draw a bar graph to represent the set of categorical (nominal) data.

Colour	Frequency
Blonde	
Brown	
Red	

(b) What is the least frequently observed hair colour?

4 A survey conducted by a bus company received the results as summarised in the following table.

Type of complaint	Number of complaints
Punctuality	120
Cleanliness	30
Slow trip	20
Lack of seats	80
Cost of trip	15
Attitude of the driver	5
Total	**270**

(a) Find the percentage for each complaint and reorder the table staring with the largest number of complaints. Then complete the cumulative percentage column.

(b) Draw the Pareto chart for this table.

(c) Which areas would you work on in order to reduce the number of complaints received?

6 A survey of 100 high school students was carried out asking what type of phone they owned. The results are contained in the following table.

	Apple	Samsung	LG	Other	Total
Boys	15	12	15	8	50
Girls	20	10	15	5	50
Total	35	22	30	13	100

(a) How many students had an Apple phone?
(b) How many students did not have a Samsung phone?
(c) What proportion of the students had a LG phone?
(d) If a student was selected at random from the group, what is the probability that their phone was not an Apple, Samsung or LG?

8 Draw a segmented bar graph for the following data using the following steps:
1 Use the total grams per serving to determine a convenient length for the segmented bar graph.
2 Calculate the length of each component to 1 decimal place, and then draw the segmented bar graph to represent the composition of the food source.
(a) Chick peas

Total grams per serving	Protein	Total fat	Carbohydrate	Dietary fibre	Other
85	6	1.9	16.3	6.4	54.4

(i) The total grams per serving is 85, hence a convenient length for the graph is [15/16/17/18/19] cm

(ii) The length of each component, to 1 decimal place:
Protein: Dietary fibre:
Total fat: Other:
Carbohydrate:

(iii) If 68 cm is drawn to represent the total, then how many cm should protein and carbohydrate take?

10 Which of the following statements is incorrect?

   A A histogram is used for numerical (continuous) data.
   B A histogram is used for numerical (discrete) data.
   C A dot plot can be used for numerical (discrete) data.
   D A bar graph should never be used for numerical data.

11 The scores in the first round of a club golf championship were as follows:

68, 72, 76, 84, 82, 80, 69, 71, 70, 73, 77, 76, 81, 80, 87, 88, 79, 76, 69, 71, 74, 75, 77, 77, 78, 82, 84, 83, 82, 77, 76, 70, 88, 73, 72, 71, 74, 66, 77, 79, 64

   (a) What is the range or difference between the highest and the lowest scores?
   (b) Create a stem-and-leaf plot showing the data.

13 (a) Draw a histogram to represent the following set of continuous numerical data.

Score	Frequency
0–<10	9
10–<20	18
20–<30	13
30–<40	15
40–<50	14
50–<60	16

What are the lowest and highest scores that could have been included in the data?

17 A manufacturer received the following complaints from purchasers of their new ovens.

Defect	Frequency
Faulty light	17
Faulty fan	12
Faulty element	9
Damaged box	4
Scratched glass	3
Other	2
Total	**47**

(a) Add the percentage and cumulative percentage columns to this table.

(b) Draw the Pareto chart for this information.