Unit 20 · Statistics

HARDER PRACTICE QUESTIONS

Full marks 27

Write your answers on separate paper. Show your working, and check every frequency table by adding its frequencies. The data on this sheet are made up.

1 Shoe sizes [4]

Here are the shoe sizes of 24 students.

4, 5, 3, 6, 5, 4, 5, 7, 4, 5, 6, 3, 5, 4, 6, 5, 7, 4, 5, 6, 5, 4, 3, 6

i. Make a frequency table with tally marks.

ii. Which size is the most common?

iii. How many students wear size 5 or bigger?

iv. A shop orders shoes for these students. Which two sizes should it order the fewest of?

2 Spot the errors [3]

Fifteen students said how many books they read last month:

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

Ankita made this frequency table:

Books	1	0	2	3	4
Frequency	4	2	4	2	1

i. Find three things wrong with her table.

ii. How could adding the frequencies have warned her?

iii. Make the correct table.

3 Choosing a scale [4]

A shop counted its customers each day of one week:

Day	Sun	Mon	Tue	Wed	Thu	Fri
Customers	46	18	25	31	12	38

Mijash wants to draw a bar diagram on squared paper that has room for bars only 10 squares tall.

i. Why can't one square stand for one customer?

ii. Choose a scale, and say why it is a good one.

iii. With your scale, how tall are the bars for Sunday and for Thursday?

iv. Draw the bar diagram on squared paper, with its title and both axes named.

4 A diagram that misleads [3]

A tea shop sold 45 cups on Monday and 50 cups on Tuesday. On its bar diagram the Y-axis starts at **40**, not 0, so Monday's bar is 5 squares tall and Tuesday's 10 squares.

i. What does the diagram seem to say about Tuesday's sales?

ii. Is that true? Explain.

iii. How tall should the bars be with the scale starting at 0 and 1 square = 5 cups?

5 The missing frequency [3]

80 students were asked their favorite subject. Science 18, Math 25, Nepali 12, English 9, and the rest chose Social Studies.

i. How many chose Social Studies?

ii. Which subject was chosen most often?

iii. How many more chose Math than Science?

6 Which class walks more? [3]

In Class 6A, 12 of the 30 students walk to school. In Class 6B, 14 of the 40 students walk. Rehan says: “More students walk in 6B, so walking is more common in 6B.”

i. Is he right that more students walk in 6B?
ii. What percentage of each class walks?
iii. In which class is walking more common? Was Rehan right?

7 Make your own [3]

Plan a small survey of your class. Write the question you would ask, the answers you expect (four or five groups), and draw the empty frequency table you would fill in. Say how you will check your table when it is done.

8 Think: from the table back to the data [4]

This table shows how many children there are in some families.

Children in the family	1	2	3	4
Number of families	6	9	4	1

i. How many families are there?
ii. How many children are there in all these families?
iii. How many families have more than 2 children?
iv. Can you tell from the table which family has 4 children, or the order in which the families were asked? Why?