Unit 13 · Statistics

HARDER WORKSHEET

Full marks 20

Name _____ Class _____ Roll no. _____ Date _____ Marks _____ / 20

1 Two missing frequencies [3]

Solve. Show your working.

The table has 40 students and a mean of 26. Find p and q.

Marks	0–10	10–20	20–30	30–40	40–50
Students	4	p	10	q	6

Answer: _____

2 Two classes together [2]

Solve. Show your working.

Class A's 30 students have a mean mark of 42 and Class B's 20 students a mean of 52. Find the mean of all 50 students. Why isn't it 47?

Answer: _____

3 A value misread [2]

Solve. Show your working.

The mean of 20 values was found to be 35. Later it was found that 48 had been copied as 84. Find the correct mean.

Answer: _____

4 Work backwards from the mode [3]

Solve. Show your working.

The mode of this table is 34. Find x.

Marks	0–10	10–20	20–30	30–40	40–50
Students	5	8	x	12	6

Answer: _____

5 Is the report possible? [3]

Answer the following questions. Give reasons.

a. A report on a class of 25 says: "The mean mark was 42 out of 100, and 20 students scored more than 80." Can this be true? **[2]**

b. Another report says: "The median was 60 and the first quartile 65." Can this be true? **[1]**

6 Change every value [2]

Answer the following question.

Every mark in a table is doubled and then 3 is added. The old mean was 20 and the old median 18. What are the new mean and median? Explain.

7 Spread of the middle half [3]

Solve. Show your working.

Class 10A's marks are in the table. Class 10B's have $Q_1 = 32$ and $Q_3 = 45$. Whose middle half of students is closer together?

Marks	**10–20**	**20–30**	**30–40**	**40–50**	**50–60**
Students	2	6	20	8	4

Answer: _____

8 Make your own [2]

Answer the following question.

Make a frequency table with the classes 0–10, 10–20, 20–30, 30–40, 40–50 and 20 values whose median is exactly 30. Show that it works.