Grow the Crop

Handout 31

Examples of Quartiles

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Example 1:

Below is a list of test marks of students, arranged in order. Calculate the 1st, 2nd and 3rd quartiles.

2; 5; 5; 5; 12; 13; 13; 14; 15; 15; 15; 17; 19; 19; 19; 20; 22; 24; 25; 26; 26; 30

1. First, we calculate the 2nd quartile or median:

2; 5; 5; 5; 12; 13; 13; 14; 15; 15; 15; 17; 19; 19; 19; 20; 22; 24; 25; 26; 26; 30

Median = (15+17)/2 = 16

2. Now we calculate the 1st quartile:

2; 5; 5; 5; 12; 13; 13; 14; 15; 15; 15; 17; 19; 19; 19; 20; 22; 24; 25; 26; 26; 30

1st quartile = (12+13)/2 = 12,5

3. Now we calculate the 3rd quartile:

2; 5; 5; 5; 12; 13; 13; 14; 15; 15; 15; 17; 19; 19; 19; 20; 22; 24; 25; 26; 26; 30

3rd quartile = (22+24)/2 = 23

4. Now comes the 5-number summary

Minimum value of the data set	2
1st quartile	12.5
2nd quartile = median	16
3rd quartile	23
Maximum value of the data set	10.5

Example 2:

Mrs. Naidoo has set 3 Maths tests for her class. She wants to compare how the learners have fared in the three tests. Below is the summary of her results.

	Test 1	Test 2	Test 3
Minimum	4	4	9
1st quartile	11	17	26.5
2nd quartile/median	26	30	39
3rd quartile	39	41	45
Maximum	50	50	50

Interpretation:

- Comparing tests 1 and 2, we can see that the minimum and maximum values are the same.
- The quartiles for test 2 are much higher than for test 1, showing that pupils fared better in test 2.
- In Test 3 the minimum value is higher, showing that the weakest pupil improved.
- The quartiles are even higher than test 2, indicating that the class improved overall.
- Mrs. Naidoo is happy.