Percentile Rank for Grouped Data

The percentile rank for grouped data is computed by:

$$P_R = \frac{100}{N}\left[\frac{(s - L_{P_k})f}{i} + cf_b\right]$$

where:
P_R	$=$	percentile rank in percent form
N	$=$	total scores/values
s	$=$	score/value given
L_{P_k}	$=$	lower class boundary in the P_k class
f	$=$	frequency of the class interval where s is located
cf_b	$=$	cumulative frequency of the class before the P_k class
i	$=$	size of the class interval

Practice Exercises

Solve the following problems completely.

Mid-year Test Scores of Students in Math

Score	Frequency
41 – 45	1
36 – 40	8
31 – 35	8
26 – 30	14
21 – 25	7
16 – 20	2

Compute the percentile rank of each data value.
1. 22
2. 33
3. 37
4. 29
5. 24

Weights of 8–Tesla Students

Weight in kg	Frequency
40 – 44	1
45 – 49	14
50 – 54	15
55 – 59	21
60 – 64	14
65 – 69	10
70 – 74	4
75 – 79	1

Compute the percentile rank of each data value.
6. 41
7. 77
8. 61
9. 54
10. 65

Problem Set

Solve the following problems completely.

Scores of 10–Tesla Students in the 4th Periodic Test in Mathematics

Score	Frequency
46 – 50	2
41 – 45	9
36 – 40	13
31 – 35	11
26 – 30	10
21 – 25	5

Compute the percentile rank of each data value.
1. 27
2. 44
3. 48
4. 23
5. 34

Number of Mistakes Made by 50 Students in Factoring Quadratic Equations

Number of Mistakes	Frequency
0 – 2	4
3 – 5	8
6 – 8	15
9 – 11	10
12 – 14	6
15 – 17	5
18 – 20	2

Compute the percentile rank of each data value.
6. 16
7. 5
8. 13
9. 9
10. 19