Quartiles for Grouped Data

Total points = 48

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

Score	f	cf< ✓
46 – 50	2	50
41 – 45	9	48
36 – 40	13	39
31 – 35	11	26
26 – 30	10	15
21 – 25	5	5

$i = 5$ ✓ $N = 50$ ✓

1. $\frac{2(50)}{4} = 25$ ✓
   $31 - 35 \quad Q_2$ ✓
   $Q_2 = lb + \left[\frac{\frac{2N}{4} - cf_b}{f_{Q_2}}\right] i$ ✓
   $Q_2 = 30.5 + \left[\frac{\frac{1(50)}{2} - 15}{11}\right] 5$ ✓
   $Q_2 = 30.5 + 4.545$ ✓
   $Q_2 = 35.05$ ✓

2. $\frac{3(50)}{4} = 37.5$ ✓
   $36 - 40 \quad Q_3$ ✓
   $Q_3 = lb + \left[\frac{\frac{3N}{4} - cf_b}{f_{Q_3}}\right] i$ ✓
   $Q_3 = 35.5 + \left[\frac{\frac{3(50)}{4} - 26}{13}\right] 5$ ✓
   $Q_3 = 35.5 + 4.423$ ✓
   $Q_3 = 39.92$ ✓

3. $\frac{(50)}{4} = 12.5$ ✓
   $26 - 30 \quad Q_1$ ✓
   $Q_1 = lb + \left[\frac{\frac{N}{4} - cf_b}{f_{Q_1}}\right] i$ ✓
   $Q_1 = 25.5 + \left[\frac{\frac{50}{4} - 5}{10}\right] 5$ ✓
   $Q_1 = 25.5 + 3.75$ ✓
   $Q_1 = 29.25$ ✓

4. $IQR = Q_3 - Q_1$ ✓
   $IQR = 39.92 - 29.25$ ✓
   $IQR = 10.67$ ✓

Number of Mistakes Made by 50 Students in Factoring Quadratic Equations

Number of Mistakes	f	cf< ✓
18 – 20	2	50
15 – 17	5	48
12 – 14	6	43
9 – 11	10	37
6 – 8	15	27
3 – 5	8	12
0 – 2	4	4

$i = 3$ ✓ $N = 50$ ✓

5. $\frac{2(50)}{4} = 25$ ✓
   $6 - 8 \quad Q_2$ ✓
   $Q_2 = lb + \left[\frac{\frac{2N}{4} - cf_b}{f_{Q_2}}\right] i$ ✓
   $Q_2 = 5.5 + \left[\frac{\frac{2(50)}{4} - 12}{15}\right] 3$ ✓
   $Q_2 = 5.5 + 2.6$ ✓
   $Q_2 = 8.1$ ✓

6. $\frac{3(50)}{4} = 37.5$ ✓
   $12 - 14 \quad Q_3$ ✓
   $Q_3 = lb + \left[\frac{\frac{3N}{4} - cf_b}{f_{Q_3}}\right] i$ ✓
   $Q_3 = 11.5 + \left[\frac{\frac{3(50)}{4} - 37}{6}\right] 3$ ✓
   $Q_3 = 11.5 + 0.25$ ✓
   $Q_3 = 11.75$ ✓

7. $\frac{50}{4} = 12.5$ ✓
   $6 - 8 \quad Q_1$ ✓
   $Q_1 = lb + \left[\frac{\frac{N}{4} - cf_b}{f_{Q_1}}\right] i$ ✓
   $Q_1 = 5.5 + \left[\frac{\frac{50}{4} - 12}{15}\right] 3$ ✓
   $Q_1 = 5.5 + 0.1$ ✓
   $Q_1 = 5.6$ ✓

8. $IQR = Q_3 - Q_1$ ✓
   $IQR = 11.75 - 5.6$ ✓
   $IQR = 6.15$ ✓

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