Percentiles for Grouped Data

Total points = 66

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. $\frac{76(50)}{100} = 38$ ✓
   $36 - 40$ P_{76} ✓
   $P_{76} = lb + \left[\frac{\frac{76N}{100} - cf_b}{f_{P_{76}}}\right] i$ ✓
   $P_{76} = 35.5 + \left[\frac{\frac{76(50)}{100} - 26}{13}\right] 5$ ✓
   $P_{76} = 35.5 + 4.615$ ✓
   $P_{76} = 40.12$ ✓
2. $\frac{93(50)}{100} = 46.5$ ✓
   $41 - 45$ P_{93} ✓
   $P_{93} = lb + \left[\frac{\frac{93N}{100} - cf_b}{f_{P_{93}}}\right] i$ ✓
   $P_{93} = 40.5 + \left[\frac{\frac{93(50)}{100} - 39}{9}\right] 5$ ✓
   $P_{93} = 40.5 + 4.167$ ✓
   $P_{93} = 44.67$ ✓
3. $\frac{61(50)}{100} = 30.5$ ✓
   $36 - 40$ P_{61} ✓
   $P_{61} = lb + \left[\frac{\frac{61N}{100} - cf_b}{f_{P_{61}}}\right] i$ ✓
   $P_{61} = 35.5 + \left[\frac{\frac{61(50)}{100} - 26}{13}\right] 5$ ✓
   $P_{61} = 35.5 + 1.731$ ✓
   $P_{61} = 37.23$ ✓
4. $\frac{77(50)}{100} = 38.5$ ✓
   $36 - 40$ P_{77} ✓
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   $P_{77} = 35.5 + \left[\frac{\frac{77(50)}{100} - 26}{13}\right] 5$ ✓
   $P_{77} = 35.5 + 4.808$ ✓
   $P_{77} = 40.31$ ✓
5. $\frac{38(50)}{100} = 19$ ✓
   $31 - 35$ P_{38} ✓
   $P_{38} = lb + \left[\frac{\frac{38N}{100} - cf_b}{f_{P_{38}}}\right] i$ ✓
   $P_{38} = 30.5 + \left[\frac{\frac{38(50)}{100} - 15}{11}\right] 5$ ✓
   $P_{38} = 30.5 + 1.818$ ✓
   $P_{38} = 32.32$ ✓

Number of Mistakes Made by 50 Students in Factoring Quadratic Equations

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

6. $\frac{27(50)}{100} = 13.5$ ✓
   $6 - 8$ P_{27} ✓
   $P_{27} = lb + \left[\frac{\frac{27N}{100} - cf_b}{f_{P_{27}}}\right] i$ ✓
   $P_{27} = 5.5 + \left[\frac{\frac{27(50)}{100} - 12}{15}\right] 3$ ✓
   $P_{27} = 5.5 + 0.3$ ✓
   $P_{27} = 5.8$ ✓
7. $\frac{39(50)}{100} = 19.5$ ✓
   $6 - 8$ P_{39} ✓
   $P_{39} = lb + \left[\frac{\frac{39N}{100} - cf_b}{f_{P_{39}}}\right] i$ ✓
   $P_{39} = 5.5 + \left[\frac{\frac{39(50)}{100} - 12}{15}\right] 3$ ✓
   $P_{39} = 5.5 + 1.5$ ✓
   $P_{39} = 7$ ✓
8. $\frac{81(50)}{100} = 40.5$ ✓
   $12 - 14$ P_{81} ✓
   $P_{81} = lb + \left[\frac{\frac{81N}{100} - cf_b}{f_{P_{81}}}\right] i$ ✓
   $P_{81} = 11.5 + \left[\frac{\frac{81(50)}{100} - 37}{6}\right] 3$ ✓
   $P_{81} = 11.5 + 1.75$ ✓
   $P_{81} = 13.25$ ✓
9. $\frac{56(50)}{100} = 28$ ✓
   $9 - 11$ P_{56} ✓
   $P_{56} = lb + \left[\frac{\frac{56N}{100} - cf_b}{f_{P_{56}}}\right] i$ ✓
   $P_{56} = 8.5 + \left[\frac{\frac{56(50)}{100} - 27}{10}\right] 3$ ✓
   $P_{56} = 8.5 + 0.3$ ✓
   $P_{56} = 8.8$ ✓
10. $\frac{68(50)}{100} = 34$ ✓
    $9 - 11$ P_{68} ✓
    $P_{68} = lb + \left[\frac{\frac{68N}{100} - cf_b}{f_{P_{68}}}\right] i$ ✓
    $P_{68} = 8.5 + \left[\frac{\frac{68(50)}{100} - 27}{10}\right] 3$ ✓
    $P_{68} = 8.5 + 2.1$ ✓
    $P_{68} = 10.6$ ✓

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