Percentiles for Ungrouped Data

Total points = 52

17	20	23	25	28	28	32	32	35	37	
41	46	47	48	51	52	55	55	56	60	✓

$n = 20$ ✓

1. $P_{35} = \frac{35}{100}(n+1)_{th}$ ✓
   $P_{35} = \frac{35}{100}(20+1)_{th}$ ✓
   $P_{35} = \frac{7}{20}(21)_{th}$ ✓
   $P_{35} = 7.35_{th}$ ✓
   $P_{35} = 32$ ✓
2. $P_{60} = \frac{60}{100}(n+1)_{th}$ ✓
   $P_{60} = \frac{60}{100}(20+1)_{th}$ ✓
   $P_{60} = \frac{3}{5}(21)_{th}$ ✓
   $P_{60} = 12.6_{th}$ ✓
   $P_{60} = 46.6$ ✓
3. $P_{30} = \frac{30}{100}(n+1)_{th}$ ✓
   $P_{30} = \frac{30}{100}(20+1)_{th}$ ✓
   $P_{30} = \frac{3}{10}(21)_{th}$ ✓
   $P_{30} = 6.3_{th}$ ✓
   $P_{30} = 29.2$ ✓
4. $P_{25} = \frac{25}{100}(n+1)_{th}$ ✓
   $P_{25} = \frac{25}{100}(20+1)_{th}$ ✓
   $P_{25} = \frac{1}{4}(21)_{th}$ ✓
   $P_{25} = 5.25_{th}$ ✓
   $P_{25} = 28$ ✓
5. $P_{82} = \frac{82}{100}(n+1)_{th}$ ✓
   $P_{82} = \frac{82}{100}(20+1)_{th}$ ✓
   $P_{82} = \frac{41}{50}(21)_{th}$ ✓
   $P_{82} = 17.22_{th}$ ✓
   $P_{82} = 55$ ✓
6. $P_{50} = \frac{50}{100}(n+1)_{th}$ ✓
   $P_{50} = \frac{50}{100}(20+1)_{th}$ ✓
   $P_{50} = \frac{1}{2}(21)_{th}$ ✓
   $P_{50} = 10.5_{th}$ ✓
   $P_{50} = 39$ ✓
7. $P_{95} = \frac{95}{100}(n+1)_{th}$ ✓
   $P_{95} = \frac{95}{100}(20+1)_{th}$ ✓
   $P_{95} = \frac{19}{20}(21)_{th}$ ✓
   $P_{95} = 19.95_{th}$ ✓
   $P_{95} = 59.8$ ✓
8. $P_{72} = \frac{72}{100}(n+1)_{th}$ ✓
   $P_{72} = \frac{72}{100}(20+1)_{th}$ ✓
   $P_{72} = \frac{18}{25}(21)_{th}$ ✓
   $P_{72} = 15.12_{th}$ ✓
   $P_{72} = 51.12$ ✓
9. $P_{45} = \frac{45}{100}(n+1)_{th}$ ✓
   $P_{45} = \frac{45}{100}(20+1)_{th}$ ✓
   $P_{45} = \frac{9}{20}(21)_{th}$ ✓
   $P_{45} = 9.45_{th}$ ✓
   $P_{45} = 35.9$ ✓
10. $P_{15} = \frac{15}{100}(n+1)_{th}$ ✓
    $P_{15} = \frac{15}{100}(20+1)_{th}$ ✓
    $P_{15} = \frac{3}{20}(21)_{th}$ ✓
    $P_{15} = 3.15_{th}$ ✓
    $P_{15} = 23.3$ ✓

Percentiles for Ungrouped Data

Total points = 52

17	20	23	25	28	28	32	32	35	37	
41	46	47	48	51	52	55	55	56	60	✓

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   $P_{60} = 12.6_{th}$ ✓
   $P_{60} = 46.6$ ✓
3. $P_{30} = \frac{30}{100}(n+1)_{th}$ ✓
   $P_{30} = \frac{30}{100}(20+1)_{th}$ ✓
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   $P_{30} = 6.3_{th}$ ✓
   $P_{30} = 29.2$ ✓
4. $P_{25} = \frac{25}{100}(n+1)_{th}$ ✓
   $P_{25} = \frac{25}{100}(20+1)_{th}$ ✓
   $P_{25} = \frac{1}{4}(21)_{th}$ ✓
   $P_{25} = 5.25_{th}$ ✓
   $P_{25} = 28$ ✓
5. $P_{82} = \frac{82}{100}(n+1)_{th}$ ✓
   $P_{82} = \frac{82}{100}(20+1)_{th}$ ✓
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6. $P_{50} = \frac{50}{100}(n+1)_{th}$ ✓
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   $P_{50} = 39$ ✓
7. $P_{95} = \frac{95}{100}(n+1)_{th}$ ✓
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