

There was some confusion how to compute the pointers for the first, second, and third quartiles.

The following procedure is used to find the quartile numbers:

1. If the quartile pointer is an integer, select the quartile value corresponding to that positioning quartile pointer from an ordered array.

- Say we have 15 observations:
- 1, 3, 4, **6**, 7, 8, 8, **9**, 11, 11, 13, **15**, 16, 17, 19
- $Q1_{ptr} = (n+1) / 4 = (15+1) / 4 = 4$
- $Q2_{ptr} = 2(n+1) / 4 = 2(15+1) / 4 = 8$
- $Q3_{ptr} = 3(n+1) / 4 = 3(15+1) / 4 = 12$
- Therefore, **Q1 = 6, Q2 = 9, Q3 = 15**

2. If the quartile pointer is halfway between two integers, select the computed average of their corresponding values.

- Say we have 5 observations.
- 1, 3, **4**, 6, 7
- $Q1_{ptr} = (n+1) / 4 = (5+1) / 4 = 1.5$
- $Q2_{ptr} = 2(n+1) / 4 = 2(5+1)/4 = 3.0$
- $Q3_{ptr} = 3(n+1) / 4 = 3(5+1)/4 = 4.5$
- Therefore, **Q1 = 2, Q2 = 4, Q3 = 6.5**

3. If the quartile pointer is neither an integer nor a value halfway between two integers, select the quartile value corresponding to that *rounded off* positioning quartile pointer from an ordered array.

- Say we have 6 observations:
- 1, 3, 4, 6, 7, 8
- $Q1_{ptr} = (n+1) / 4 = (6+1) / 4 = 1.75 \sim 2$
- $Q2_{ptr} = 2(n+1) / 4 = 2(6+1) / 4 = 3.5$
- $Q3_{ptr} = 3(n+1) / 4 = 3(6+1) / 4 = 5.25 \sim 5$
- Therefore, **Q1 = 3, Q2 = 5, Q3 = 7**