Quartiles, Percentiles and the Mean

Mean

To find a mean of ungrouped data, the position to take is found by using the equation: $\frac{1}{2}n$. If the value given is whole, use the midpoint between that position and the next, otherwise, round up to the next whole number, and use the value at that index.

Quartiles

To find a quartile, use the same rules used to find the mean, except instead of finding the halfway point, find the 25% point and the 75% point.

This means that for grouped data, use linear interpolation to find the correct point. For ungrouped data, find $\frac{1}{4}n$ or $\frac{3}{4}n$ and then:

- If not whole: Round Up
- Otherwise use the value of the halfway point between this item and the next.

Percentiles

This will never be asked for in regards to ungrouped data, so use the position calculated by the equation: $n * \frac{N}{100}$ where N is the percentile. From here, use linear interpolation to find the actual value.

Notation

There is some specific notation for quartiles and percentiles:
Q_1 = Lower Quartile
Q_3 = Upper Quartile
Q_2 = Median
P_n = n^{th} percentile