Quartiles – Q_3 same as 75^{th} percentile

Percentiles

percentile rank $p = \dfrac{(L + 0.5E)}{n} \times 100$

p → percentile rank

L → number of scores less than the value

E → number of scores equal to the value

n → number of pieces of data

To find score in the p^{th} percentile,
calculate $n \times p \div 100$

↳ bump answer up to next whole number

Count up that score number from the lowest score

Ex. Data
12
17
17
18
25
27 ← 6th lowest
29

a) What number is in the 80^{th} percentile?

$n \times p \div 100$

$= 7 \times 80 \div 100$

$= 5.6$ → bump up to 6
→ find the 6^{th} lowest score.

∴ 27 is in the 80^{th} percentile
(80% of the scores are less than 27.)

b) 25 has what percentile rank?

$p = \dfrac{(L + 0.5E)}{n} \times 100$

$= \dfrac{(4 + 0.5(1))}{7} \times 100$

$= \dfrac{4.5}{7} \times 100$

$\doteq 64$

∴ 25 is in the 64^{th} percentile.
64% of the scores are less than 25.

$$\text{Percent Change} = \frac{\text{New Value} - \text{Old Value}}{\text{Old Value}} \times 100\%$$

Statistical Indices → base value set at 100%.

All other values are written as a percentage of the base value.

→ used to make it easier to compare other values to the base value

Accurate to within $\square$ percentage points 19 times out of 20.

E.g. 10% of students like exams - accurate to within 3 percentage points 19 times out of 20. Means... if the study were repeated several times, 95% of the time, between 7% and 13% of the students would say they like exams.

$\frac{19}{20} = 95\%$

$10\% + 3\% = 13\%$
$10\% - 3\% = 7\%$.

- BIAS - 4 types of survey bias
  - sampling
  - response
  - non-response
  - measurement
- CRITICAL ANALYSIS (5 questions)
  1. Is there bias in sample?
  2. Is the author an independent researcher?
  3. What is the data source?
  4. Data still relevent?
  5. Bias in analyzing?