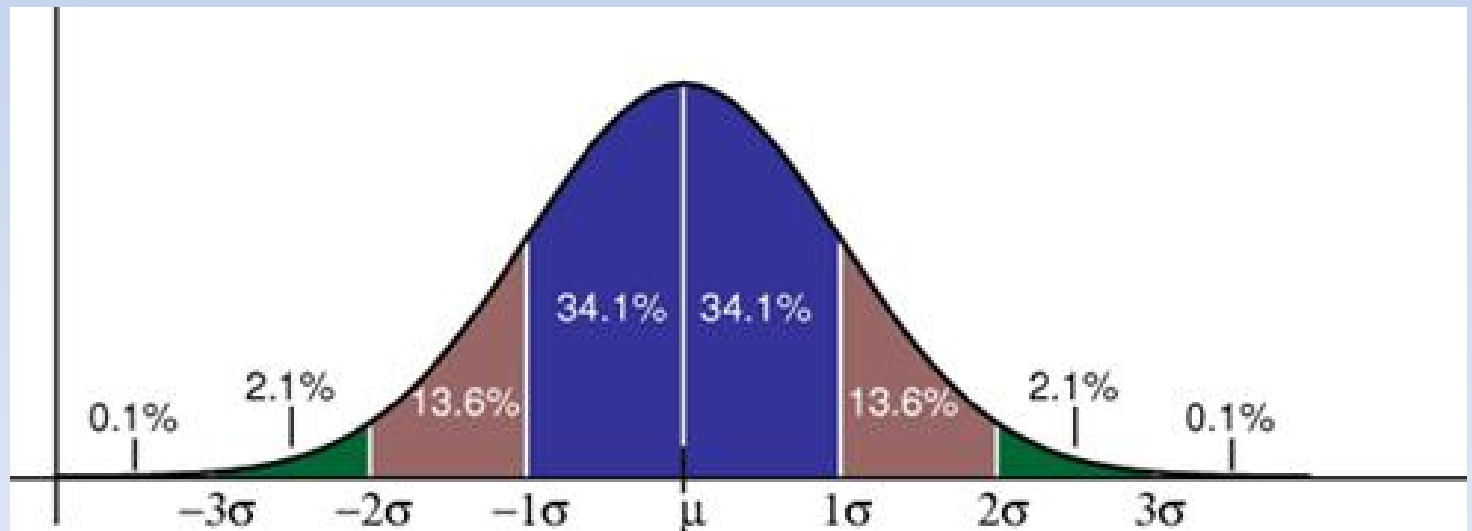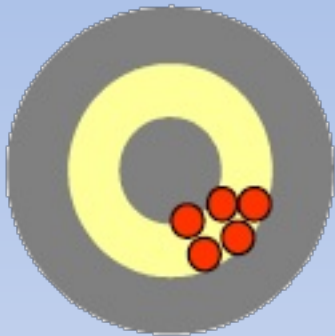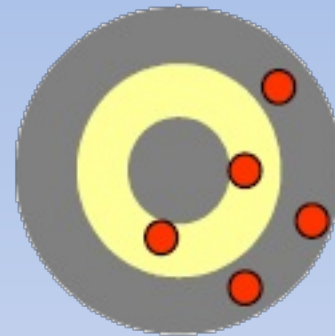# Quality Control of the data

By: Saleh Sobhdel

- Laboratory results validation?
- Accuracy & Precision?
- QC Parameters for test the laboratory?
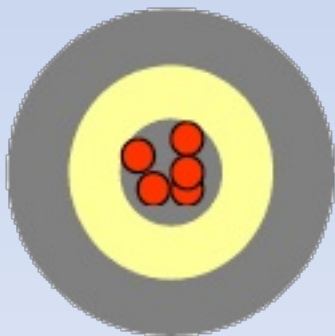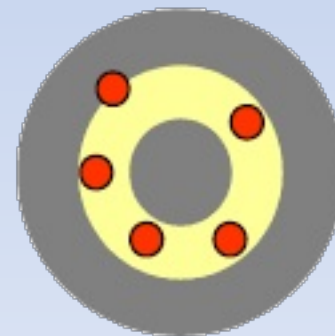- Acceptable ratio of errors?
- ….
- ….

Accuracy & Precision:

Precise, Not accurate

Not Precise, Not Accurate

Precise, Accurate

Accurate, Not Precise

Precision formula for duplicate samples:
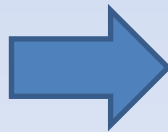
Relative Percent Deviation

Sample 1 = A1

Sample 2 = A2

S= l A1 − A2 l

% RPD = (S/X)*100

Cu_1 = 880 ppm
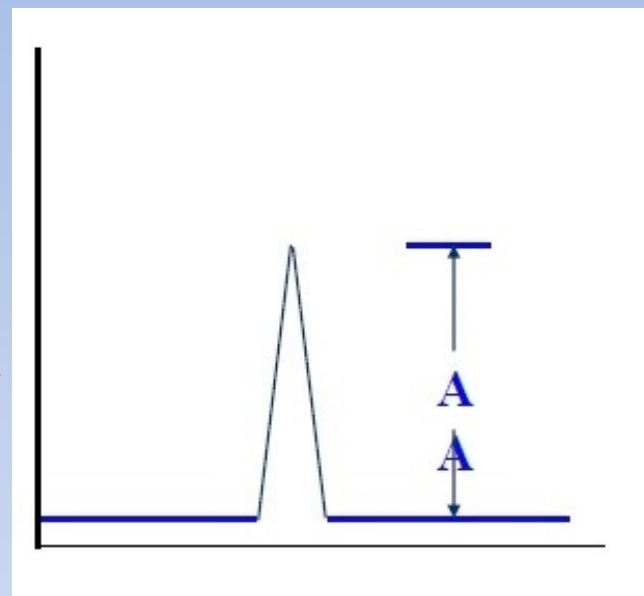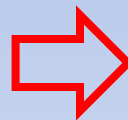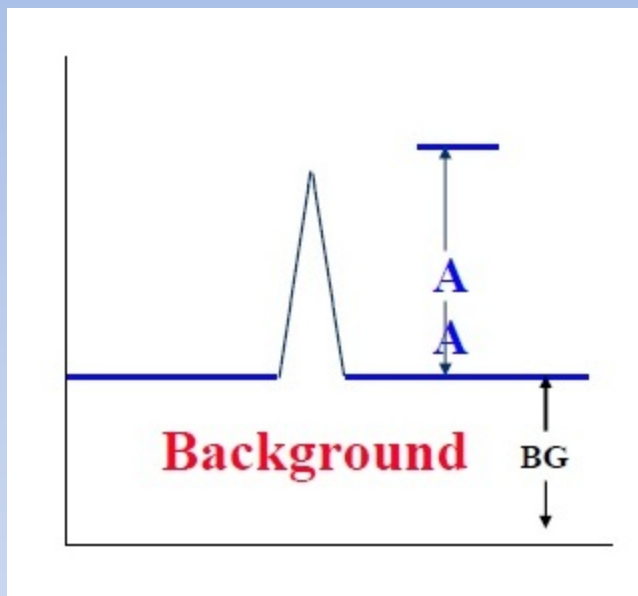
Cu_2 = 1000 ppm

➡ % RPD = 12.76

How to check the accuracy?
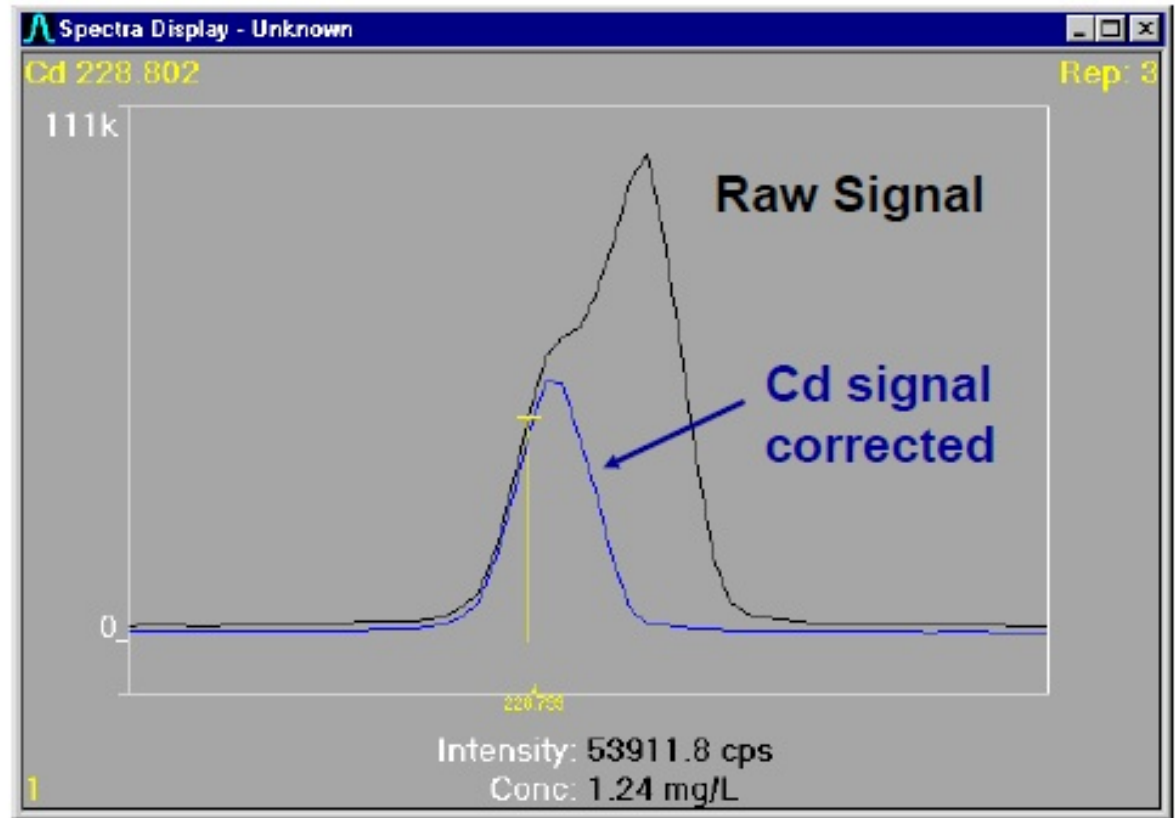
- Blank

- Standard solution & soils

How to check the Precision?

- ## Duplicate Samples

  Use duplicate samples only for Homogeneous!

- ## Replicate Samples

Spectral interference:

> **Unknown sample with Arsenic interference**

How to check laboratory results?

- Provide the CRM (Certified Reference Material)

- Prepare the RM (Reference Material)

- Use duplicate samples

- Put the samples from last projects

- Check the proficiency tests

- Check the laboratory certificates

Conclusions:

- Sampling

- Method for analyzing

- Instrument

- Laboratory QC samples

- Costumer QC samples

- Proficiency tests

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Thank you