ASQ CRE Prep course

Lesson II. A. 7. h.

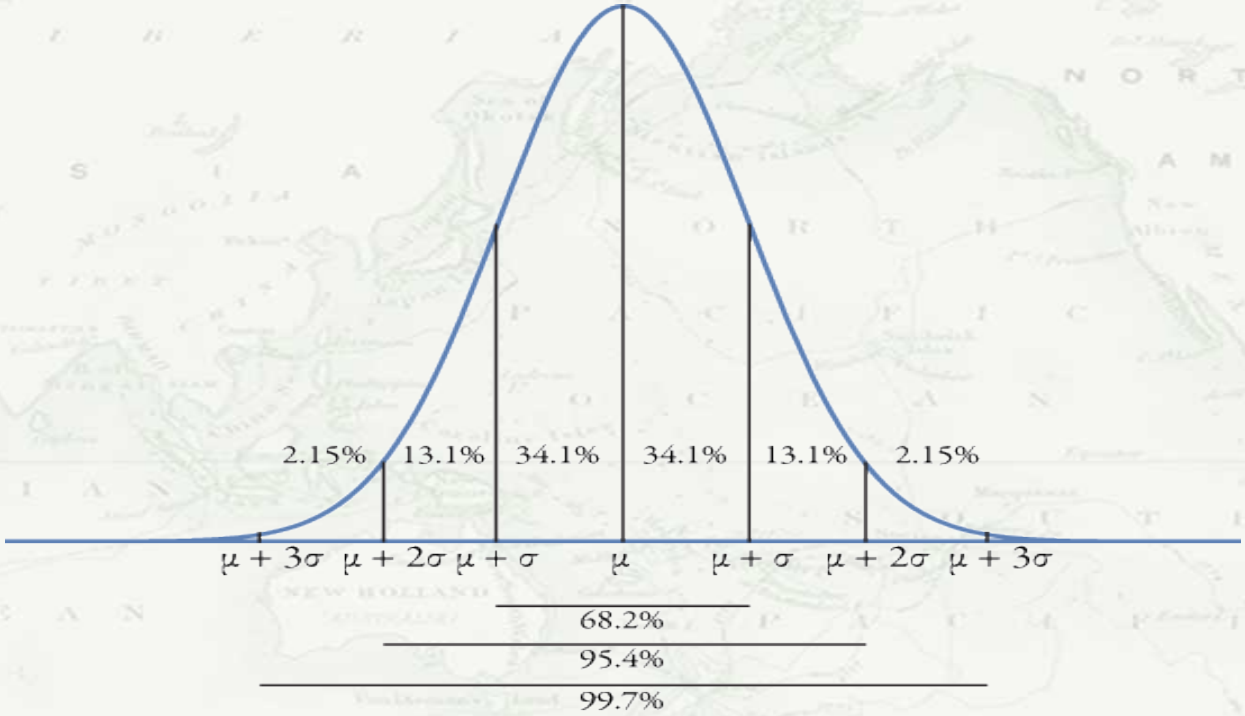
SPC and Process Capability

Standard Normal and z-values

We've seen this before and will again

THE Z-VALUE

Normal Curve and Standard Deviations



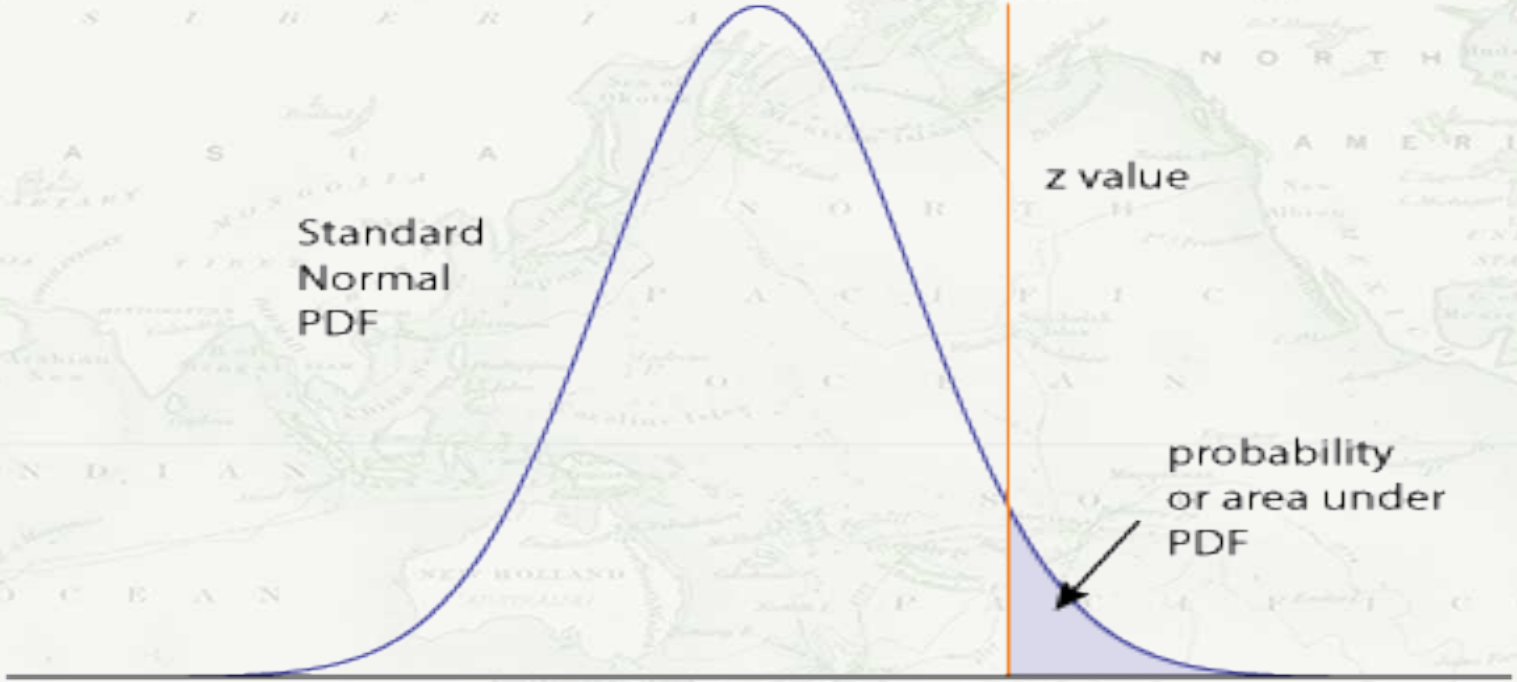
Converting data to z-values

- **The Z transformation formula is:**

$$z_{upper} = \frac{USL - \bar{X}}{s}$$

- **The area (probability) outside a specific value for a normal curve can be found using z-values** $z = \frac{X - \mu}{\sigma}$

Use the z table to find probability



Example

- **Given a population with mean weight of 150lbs and standard deviation of 20lbs**

  What is probability of student weighing more than 175 lbs?

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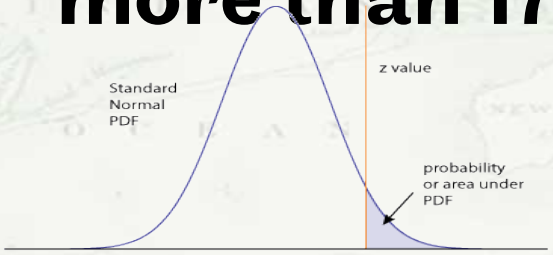

$$z = \frac{X - \mu}{\sigma}$$

$$z = \frac{175 - 150}{20}$$

$$z = 1.25$$

How do you check for normality?

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SPC and Process Capability

Capability and Charts