Quality Management Formulas

Statistical Process Control

Control Charts for Attributes (p-charts)

$$p = \frac{\#\text{ of defects}}{\text{size of sample}}$$

Establishing Control Limits

Given: *M* samples, each of size *n*

Determine "3-sigma" control limits

Compute: $\bar{p} = \frac{1}{M}(p_1 + p_2 + \ldots + p_M)$

where $p_i = \frac{\text{number of defective items in sample } i}{n}$

Compute: $S_{\bar{p}} = \sqrt{\frac{\bar{p}(1-\bar{p})}{n}}$

UCL = $\bar{p} + 3\,S_{\bar{p}}$

LCL = $\bar{p} - 3\,S_{\bar{p}}$ If LCL < 0, then set LCL = 0.