

7.1 Graphs of Normal Distributions

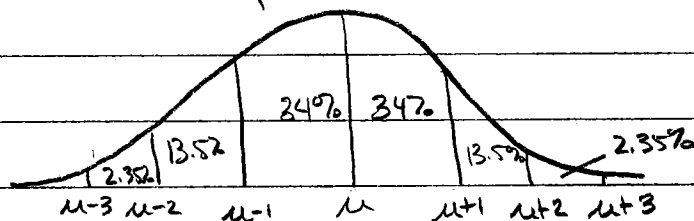
Normal bell curve

Bell shaped with the peak at the μ

Symmetrical to μ

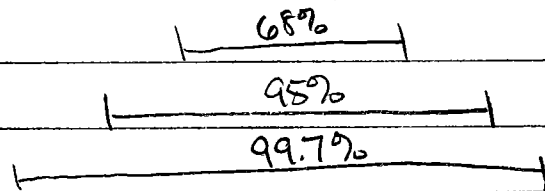
Approaches the horizontal axis but never touches or crosses it

Inflection points occur at $\mu \pm \sigma$



Empirical

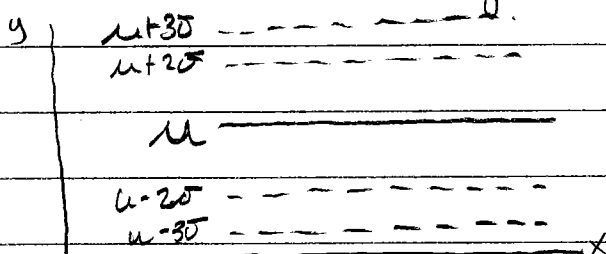
Rule:



Guided exercise 1-4 (pg. 257)

Chebyshev provides lower limits under any curve. Empirical rule is exact for a normal curve)

Control charts - "warning" device used to analyze data in regards to μ and σ . μ and σ may be found through observed or target data; time sensitive



data points are denoted as (x, y) coordinates

Warning Signals (pg. 264)

① One point falls below/above 3 σ

.03% probability

② Run of 9 consecutive points on one side of the center line μ

50% chance a point lies on either side

Nine consecutive points = $(.5)^9$

.002 each side

.004 = .4%

③ At least 2/3 consecutive points lie beyond 2 σ on the same side

.4% probability

⑮