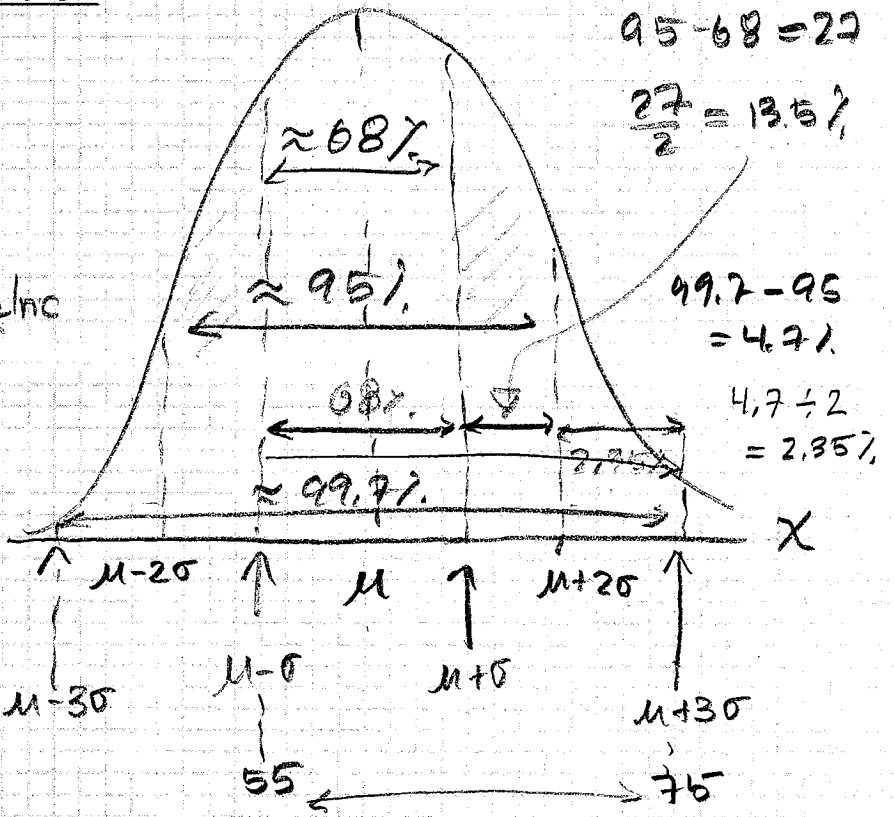


The Empirical Rule

Applies to
 "Mound Shaped"
 "Bell Shaped"
 "Normal" Symmetric



Example

If $\mu = 60$
 and $\sigma = 5$
 what percent of
 all the observations
 are between

- a) 50 and 70?
- b) 55 and 75?

Solution:

a) $z = \frac{x - \mu}{\sigma}$ = how many std dev x is away from μ

for $x = 50$ $z = \frac{50 - 60}{5} = \frac{-10}{5} = -2$

for $x = 70$ $z = \frac{70 - 60}{5} = \frac{10}{5} = 2$

b) $x = 55$ $z = \frac{55 - 60}{5} = \frac{-5}{5} = -1$

$x = 75$ $z = \frac{75 - 60}{5} = \frac{15}{5} = 3$

$68\% + 13.5\% + 2.35\% = 83.85\%$