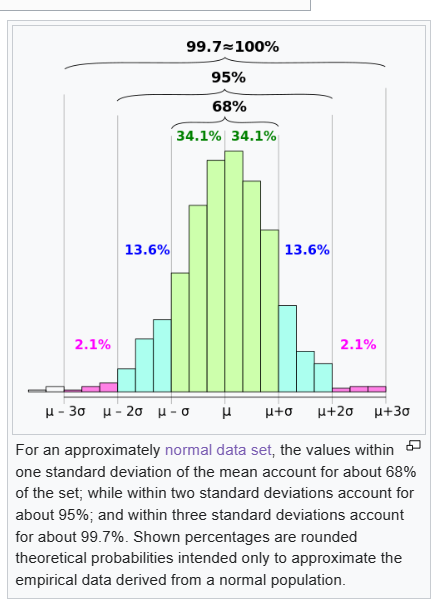
68–95–99.7 rule

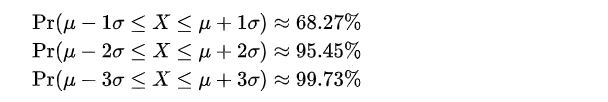
Alias

Emprical rule

Intro

68–95–99.7 rule refers the axiom of value lies in interval estimate. In normal distribution , about confidence interval, 1 standard deviation will get about 68.27% probability interval , 2 will get about 95.45, 3 will get about 99.73. And thus, this is the reason why emprical rule is also called 68-95-99.7 rule.





Proof

In normal distribution, we always have that

=

Do integral substitution with .

=>

The lower bound will be

While the upper bound will be

Nextly, we have that

=

Lastly, we put

Ref