

Notes

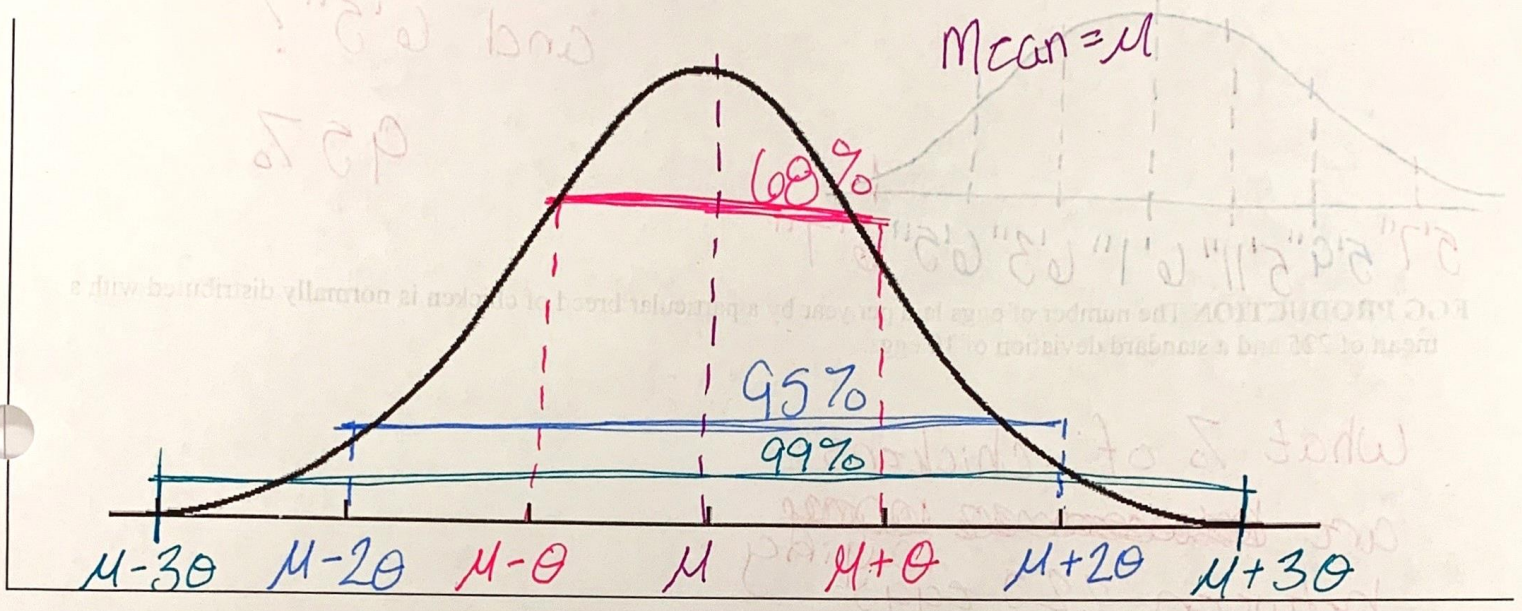
The Normal Distribution

Definition:

Standard Deviation: σ σ

A measure of spread for a set of data

Normal Distribution

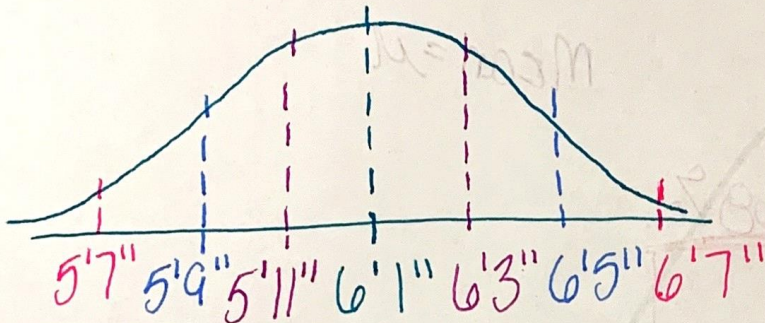


The Empirical Rule

if the data is between...

- * $\mu - \sigma$ and $\mu + \sigma$ there is 68% of the data
- * $\mu - 2\sigma$ and $\mu + 2\sigma$ there is 95% of the data
- * $\mu - 3\sigma$ and $\mu + 3\sigma$ there is 99% of the data

Example: The heights of players in a basketball league are normally distributed with a mean of 6 feet 1 inch and a standard deviation of 2 inches.



What % of players are between 5'9" and 6'5"?

95%

EGG PRODUCTION The number of eggs laid per year by a particular breed of chicken is normally distributed with a mean of 225 and a standard deviation of 10 eggs.

What % of chickens are ~~between 225 and 235~~ laying between 225 eggs and 235 eggs?

MANUFACTURING The diameter of bolts produced by a manufacturing plant is normally distributed with a mean of 18 mm and a standard deviation of 0.2 mm.

if there are 300 bolts manufactured, how many have a diameter between 18mm and 18.4mm?