(no skew)

Normal Distribution Notes

A normal distribution has a bell-shaped probability distribution graph.

μ or $\bar{x}$ = mean ← sample

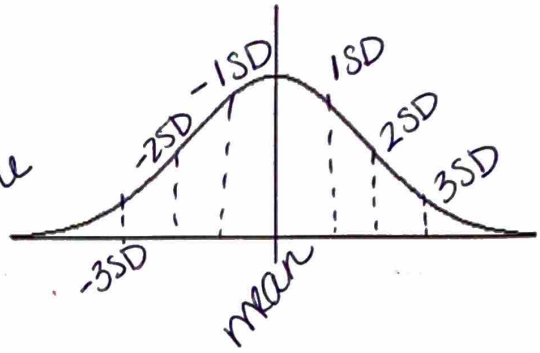
The mean is at the center of the graph where the curve is highest.

σ = standard deviation pop.

The inflection points of the curve are one standard deviation from the mean.

Sx sample

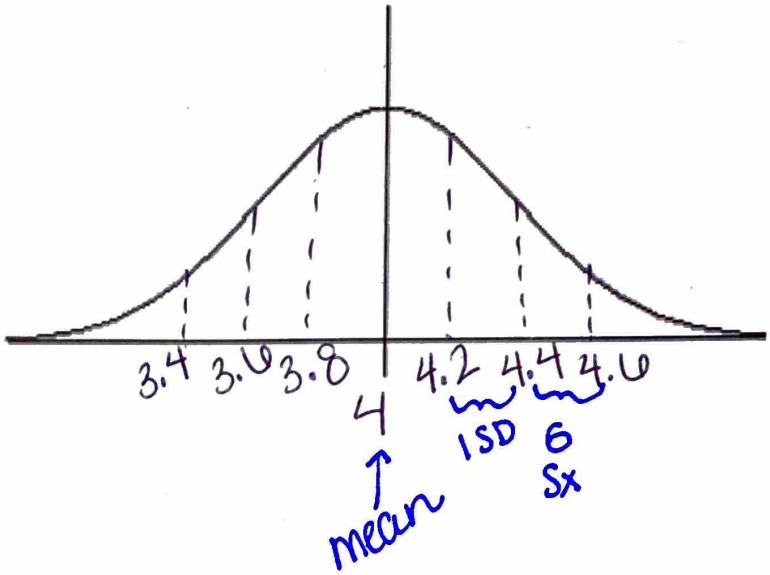
population



Example 1

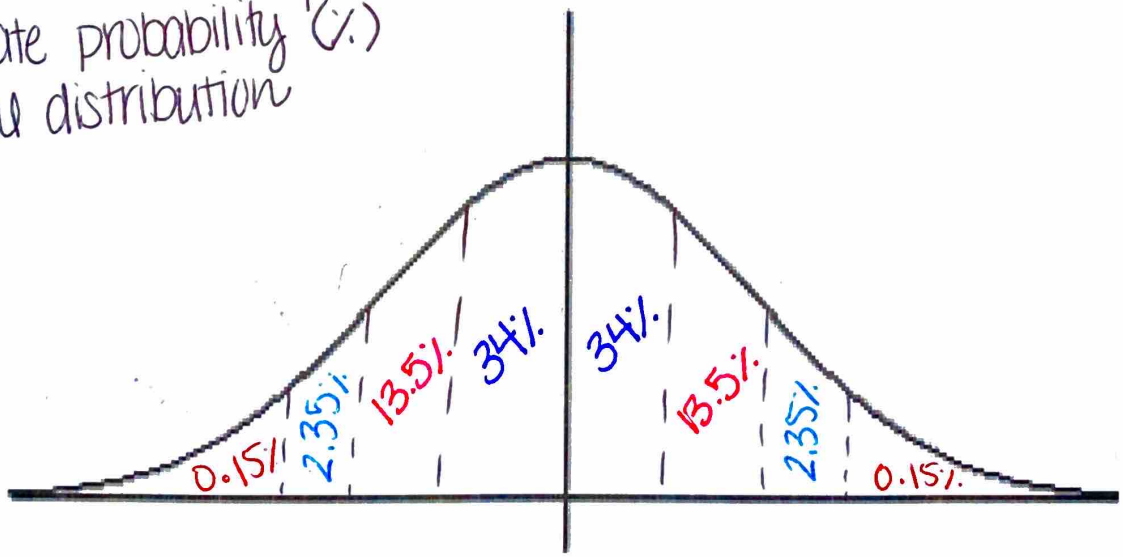
The weights of quarters are distributed normally with a mean of 4 grams and a standard deviation of .2 grams.

a. Label the mean on the normal curve.
b. Label the values that are one standard deviation from the mean.
c. Label the values that are two standard deviations from the mean.



Empirical Rule (68-95-99.7) – w/o calc.

* estimate probability (%)
* normal distribution



Example 2

Ridge counts in fingerprints are appoximately normally distributed with a mean of about 150 and a standard deviaion of about ~~50~~.

a. Lable the mean and values that are one, two an three standard deviations from the mean. ✓

Find the probability that a randomly chosen individual has a ridge count

b. Between 100 and 200. 68%.

c. Of more than 200. 16%.

d. Of less than 100. 16%.

e. Of more than 250. 2.5%.

f. How many ridges make up the upper 16% of the data?

200+ ridges → 16%.

g. If you took the finger prints of 240 people, how many people would have 200+ ridges?

① probability

② probability decimal • sample #

240 (0.16) = 38 people