



Chapter 4

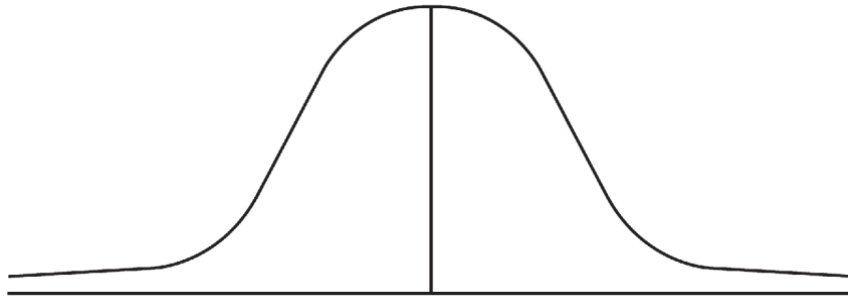
Continuity of function

1 Standard value



1. Normal of Bell-Shaped Curve

is a frequency curve with the arithmetic mean, median, and mode at the same position, that is, the position with the highest frequency.

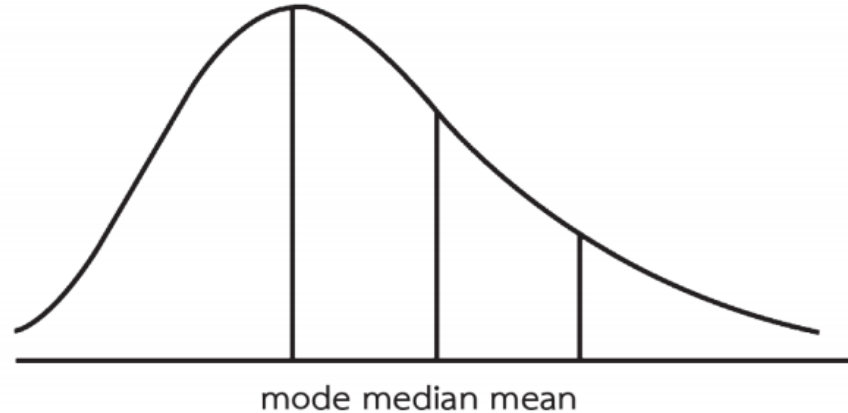


2. Positively Skewed Curve



is a frequency curve with a slight slope on the right side.

The arithmetic mean has the greatest value.

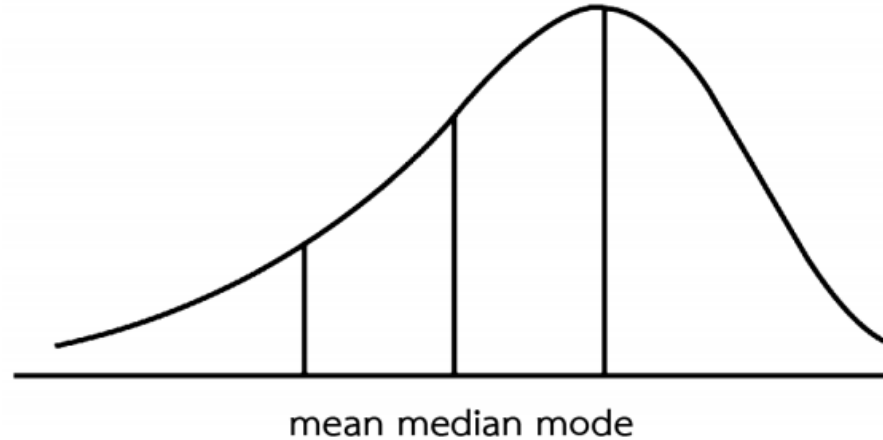




3. Negatively Skewed Curve

is a frequency curve with a slight slope on the left opposite side.

The mode has the highest value. Next is the median, and the arithmetic mean is the least.





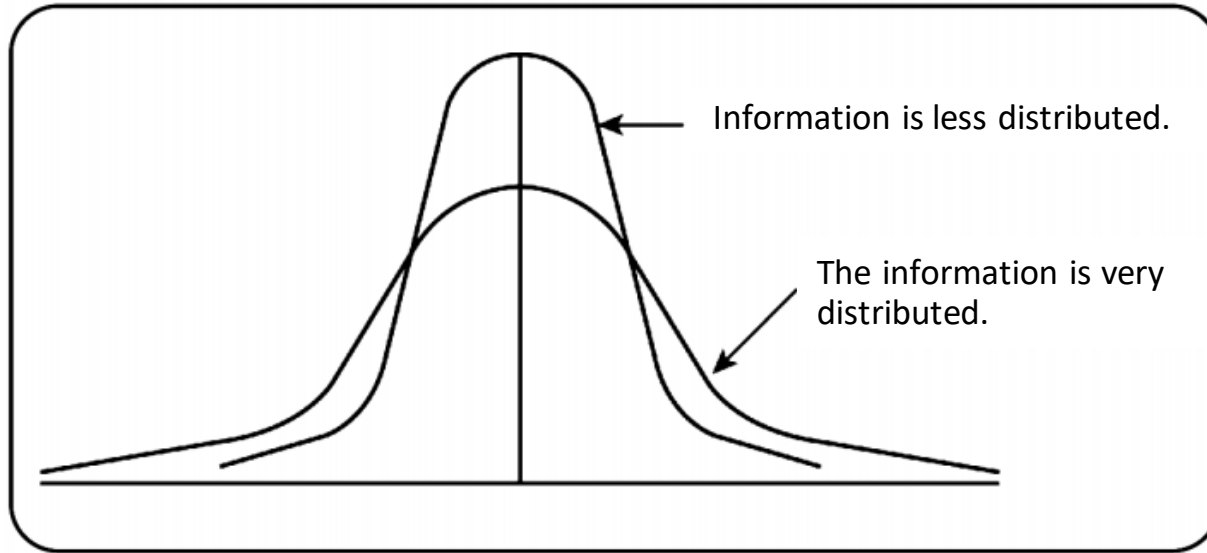
A normal curve will be more or less prominent depending on the distribution of the data.

A normal curve will have more or less kurtosis. Depends on the distribution of information as follows:

- 1] If the data is very distributed Normal curves have little kurtosis. or rather flat (Most of the data is distributed from the mean value)
- 2] If the data is less distributed Normal curves are very prominent. (Most data are clustered near the median value)




A normal curve will be more or less prominent depending on the distribution of the data.






A normal curve will be more or less prominent depending on the distribution of the data.

 In case you want to compare the values of two or more sets of data. But the values of the data cannot be directly compared. For example, Supha scored 36 points in mathematics and 39 points in English. We cannot immediately conclude which subject Supha did better. Even though the full scores are the same



 In order for the comparison to be accurate Therefore, the said scores must be converted to standard values or standard scores. Then the standard values can be compared. By considering which subject's standard score is more valuable? It is considered better or more proficient in that subject.



Standard value or standard score

It is a value that tells you the difference between the values of that data. with the average number The math for that set of data is how many times the standard deviation is using the symbol Z Score. instead of standard scores T

$$Z = \frac{X - \mu}{\sigma} \quad \text{or} \quad Z = \frac{X - \bar{X}}{S}$$

โดยที่ Z is the standard value or standard score.

X is the raw score that needs to be converted to a standard score

μ, \bar{X} is the average of that set of data

σ, S is the standard deviation of that data set.



Standard value or standard score

Standard values are used to compare the scores of data from different sets of data to see how different they are. By changing the raw scores of the two sets of data to standard values and then comparing them.

2 Properties of standard values



Properties of standard values

- **1) Standard values are numbers with no units.**
- **2) Standard values can be positive, negative, or zero.**
- **3) Negative standard value** If it is positive, it means that the score is lower than the average score. If it is positive, it means that the score is higher than the average score. and if it is zero, then the value score is equal to the average.

2 Properties of standard values



Properties of standard values

- 4) Standard values range from -3 to 3 , but may be slightly lower than -3 or higher than 3 .
- 5) Average of all normalized values of the data set will have a value equal to 0
- 6) The standard deviation of all standard values of a data set is equal to 1 .

summarize

Standard value or standard score It is a value that tells you the difference between the value of that data and the arithmetic mean of that data set by how many times the standard deviation is. Use the symbol Z Score to represent the standard value. There is a calculation formula as follows.

$$Z = \frac{X - \mu}{\sigma}$$

or

$$Z = \frac{X - \bar{X}}{S}$$

Used to compare the score values of data that come from different sets of data. What will be the differences? By changing the tips scores of both sets of data to standard values. Then they are compared. Standard values have no units. Standard values can be negative, zero, and positive.