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Normal Distribution

# Answer 1

The Z- scores are important because they can be used to calculate the probabilities of certain events that are assumed to be normally distributed. There is also a possibility to compare scores from two different normal distributions which can have considerable research implications. In order to compare two discrete variables, the standardized normal distribution is used to compare these scores under a single normal distribution.

# Answer 2

No this is not true that z scores do not have any units. Basically, the z scores are used to measure the distance between a certain value from a sample and population mean in terms of standard deviation. The unit of Z score is the population standard deviation.

# Answer 3

The normal distribution is a continuous probability distribution that contains a formula for converting the original scores to the z- scores. This makes it a suitable option to compare values having different units because the units are converted to the same ones i.e. population standard deviation. The distribution is called standard normal distribution so it also allows comparing scores from two different normal distributions.

# Answer 4

The formula for the normal distribution allows us to compare two z scores and decide on the performance or other criteria directly. This is because the numerator of the normal distribution formula shows the difference between the population mean and the given value. In general, more difference between the given value and population mean will result in a higher z score. This will mean that this value will need higher boundaries to fall under the standard normal curve. On the other hand, a smaller value will have a lower score on the normal distribution table which will mean that it will need narrower boundaries to fall under a normal distribution curve. The population standard deviation remains the same for the two values compared.

**Work Cited**

Mario F. Triola. Essentials of Statistics (6th Edition) 6th Edition. Pearson publishers, 2019.