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| Name of Faculty:  **MR. AMIT TRIPATHI**  Institute**: RAJKIYA ENGINEERING COLLEGE, BANDA**  Email ID (as submitted in the registration form): ***amittri13@gmail.com***  Discipline to which the Lab belongs**: ELECTRICAL**  Name of the Lab: **BASICS OF MATHEMATICS**  Name of experiment : **TO FIND THE STANDARD DEVIATION**  (only one Experiment per worksheet. for submitting more than one experiments, please fill up another worksheet):  Kindly Refer these documents before filling the worksheet   1. Coursework (MOOC ) on Pedagogy , Storyboard , Lab Manual : <http://bit.ly/Vlabs-MOOC> 2. Additional Documentation booklet for reference.<http://vlabs.iitb.ac.in/vlabs-dev/document.php> 3. Sample Git Repository. : https://github.com/nancy2502/virtual-lab |

1. **Story Outline:**

To find out the standard deviation by using formulas and and other equations. Then the standard deviation of a random variable , data sets or probability distribution is the sequare root of its variance. It is algebraically simpler, through in practice less robust , then the average absolute deviation. A useful property of the standard deviation is that, unlike the variance, it is expressed in the same units as the data.

1. **Story:**

The term standard deviation was first used in writing by Karl Pearson in 1894, after he used it in lectures. It was as a replacement for earlier names for the same idea.

**2.1 Set the Visual Stage Description:**

In the sample standard deviation formula for this example, the numerator is the sum of the squared deviation of each individual animal’s metabolic rate from the mean metabolic rate.

* 1. **Set User Objectives & Goals:**

Purpose of standard deviation is to explain spread in the variable. Spread in variable can explained by many measures like range, variance, deviance, interquartile range and standard deviation. Standard Deviation is most popular and robust measure of spread.

* 1. **Set Challenges and Questions/Complexity/Variations in Questions:**

**Q.** Find the standard deviation for the fallowing series of number:

2,3,6,8,11

**Q.** Find the standard deviation for the fallowing series:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Class interval | [10-15) | [15-20) | [20-25) | [25-30) | [30-35) |
|  | 3 | 5 | 7 | 4 | 2 |

**2.5 Allow pitfalls**

**\* Standard** Deviation is highly affected by by the extreme values in the series.

\* Standard deviation cannot for open end class frequency distribution.

**2.6 Conclusion:**

In conclusion, standard deviation might be a simple formula, but it has many uses in daily life. Ti ranges from the matter of measuring temperature to predict the source of the matter to finding out the index of a part of population. Furthermore, it even helps estimate the uncertainty of daily life and workplace so they could make the decision to move forward with their plan or drop it and begin again. Even though Standard deviation is simple and not a sophistical tool for everything, it could give people a first look at what are going to happen and in what percentage that will happen.

**2.7 Equations/formulas:**

(mean) : =

**4.Flow Chart :**

Input the numbers

1,2,4,5,7,10

Count the number of valus=6

Calculate the mean

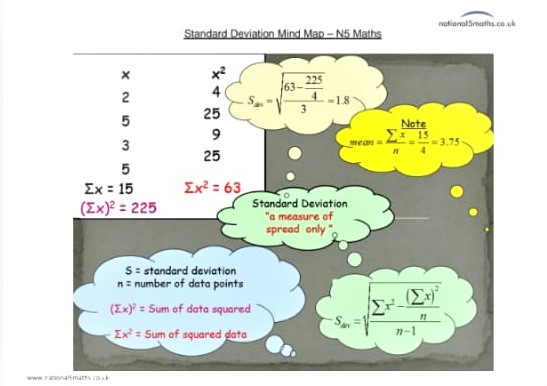
Calculate the summation

Divide by N

Output the standard deviation

Calculate the square root

**5.MIND MAP**

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