Problem Set 2

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## Warning: package 'tidyverse' was built under R version 4.0.5

## -- Attaching packages --------------------------------------- tidyverse 1.3.1 --

## v ggplot2 3.3.3 v purrr 0.3.4  
## v tibble 3.1.1 v dplyr 1.0.5  
## v tidyr 1.1.3 v stringr 1.4.0  
## v readr 1.4.0 v forcats 0.5.1

## Warning: package 'ggplot2' was built under R version 4.0.4

## Warning: package 'tibble' was built under R version 4.0.5

## Warning: package 'tidyr' was built under R version 4.0.5

## Warning: package 'dplyr' was built under R version 4.0.5

## Warning: package 'forcats' was built under R version 4.0.5

## -- Conflicts ------------------------------------------ tidyverse\_conflicts() --  
## x dplyr::filter() masks stats::filter()  
## x dplyr::lag() masks stats::lag()

1. What would be the closest definition for deviance?

A. The distance between the mean and each individual’s score B. The distance between the mean and the median C. The word for inappropriate numbers D. The average distance that scores vary from the mean

**Answer:**

1. What is the difference between variance and standard deviation? What is similar between variance and standard deviation?

**Answer:**

1. If adding the deviance scores for each participant, what value *should* you get if you did everything correctly?

**Answer:**

1. What is the range useful for?

**Answer:**

1. How does the range differ from the interquartile range?

**Answer:**

1. Calculate the sum of deviations. If you’d like to recreate the table that was shown in class you will just fill in the blanks for mean, deviance, and for dev\_squared and just rerun everything every time you fill in more information in the table.

data <- c(9, 7, 8, 3, 5, 2, 4, 7, 4, 9)  
data

## [1] 9 7 8 3 5 2 4 7 4 9

table\_create <- data.frame(values = c(9, 7, 8, 3, 5, 2, 4, 7, 4, 9),  
 mean = c('', '', '', '', '', '', '', '', '', ''),  
 deviance = c('', '', '', '', '', '', '', '', '', ''),  
 dev\_squared = c('', '', '', '', '', '', '', '', '', ''))   
table\_create

## values mean deviance dev\_squared  
## 1 9   
## 2 7   
## 3 8   
## 4 3   
## 5 5   
## 6 2   
## 7 4   
## 8 7   
## 9 4   
## 10 9

**Answer:**

1. Calculate the sum of deviance squared.

**Answer:**

1. Calculate the variance.

**Answer:**

1. Calculate the standard deviation.

**Answer:**