

Due Date: August 1st, 2019

Problems Due: 1,2,3

1. Security guard Shyamala has a log book of the institute bus. In the log book she keeps track of the kilometer reading before each time driver Sakshi fills petrol. The last 10 readings are:

65311, 65624, 65908, 66219, 66499, 66821, 67145, 67447, 67786, 68103

- (a) Enter these numbers into R as a variable `kreading`. Use the function `diff` on the data. What does it give?

```
> kreading = c(65311, 65624, 65908, 66219, 66499, 66821, 67145, 67447)
> differences = diff(kreading)
```

Write down the number of kilometers between each time Sakshi fills up petrol.

- (b) Use the `max` to find the maximum number of kilometers, the `mean` function to find the average number of kilometers and the `min` to get the minimum number of kilometers Sakshi has driven between two fill-ups.
2. Jaldi Suppandi, a D-block student resident started tracking his commute time for two weeks and finds the following times in minutes

7, 6, 10, 8, 7, 9, 15, 6, 4, 10, 8, 6, 9, 10

- (a) Enter this into R as a variable `Jaldicommmutes`. Use the function `max` to find the longest commute time, the function `mean` to find the average and the function `min` to find the minimum.
 - (b) When confronted by Slowpoke Siva, Jaldi realises that entry 4 was a mistake. It should have been 14 (as he had to return midway since he forgot his H.W.). How can you fix this? Do so, and then find the new average.
 - (c) What does the below command provide in R ?
 - (d) What do you get? What percent of your commutes are less than 17 minutes? How can you answer this with R?
3. Naina's cell phone bill varies from month to month. Suppose in her first year of Super Math (hons.) program, under the Drop-atmost 10-calls monthly plan, the following monthly amounts were incurred:

460, 330, 390, 370, 460, 300, 480, 320, 490, 350, 300, 480

- (a) Enter this data into a variable called `Nainabill`. Use the `sum` command to find the amount spent by Naina that year on the cell phone.
- (b) Using R find out what is the smallest amount she spent in a month and the largest amount she spent in a month ?
- (c) How many months was the amount greater than Rs 400? What percentage was this?
- (d) If her monthly stipend from PRESPIRE fellowship was Rs 3000. Using R store her balance(after paying her phone bill) in a variable called `freemoney`. Find the average amount available each month for her other expenses.