

#Worksheet1 FLOREDA MAE SIATAN BSIT 2-A

#Given Variables

```
age <- c(34,28,22,36,27,18,52,39,42,29,  
        35,31,27,22,37,34,19,20,57,49,  
        50,37,46,25,17,37,42,53,41,51,  
        35,24,33,41)
```

#A. How many data points?

#Answer: 34

#B. Write the R code and its output.

#R CODE

```
age <- c(34,28,22,36,27,18,52,39,42,29,  
        35,31,27,22,37,34,19,20,57,49,  
        50,37,46,25,17,37,42,53,41,51,  
        35,24,33,41)
```

#OUTPUTS

```
#age  num[1:34] 34,28,22,36,27,18,52,39,42,29,  
        #35,31,27,22,37,34,19,20,57,49,  
        #50,37,46,25,17,37,42,53,41,51,  
        #35,24,33,41
```

#2. Find the reciprocal for the values for age.

```
age <- c(34,28,22,36,27,18,52,39,42,29,  
        35,31,27,22,37,34,19,20,57,49,  
        50,37,46,25,17,37,42,53,41,51,  
        35,24,33,41)
```

```
reciprocal <- 1/age
```

```
reciprocal
```

```
#OUTPUTS
```

```
#[1] 0.02941176 0.03571429 0.04545455 0.02777778 0.03703704 0.05555556 0.01923077  
0.02564103 0.02380952 0.03448276 0.02857143
```

```
#[12] 0.03225806 0.03703704 0.04545455 0.02702703 0.02941176 0.05263158 0.05000000  
0.01754386 0.02040816 0.02000000 0.02702703
```

```
#[23] 0.02173913 0.04000000 0.05882353 0.02702703 0.02380952 0.01886792 0.02439024  
0.01960784 0.02857143 0.04166667 0.03030303
```

```
#[34] 0.02439024
```

```
#3. Assign also new_age <-c(age,0,age). What happen to the new age?
```

```
age <- c(34,28,22,36,27,18,52,39,42,29,  
35,31,27,22,37,34,19,20,57,49,  
50,37,46,25,17,37,42,53,41,51,  
35,24,33,41)
```

```
new_age <-c(age,0,age)
```

```
new_age
```

```
#Answer. It will display 2 sets of the vector that consist of the given age while zero is at the center of it.
```

```
# 34 28 22 36 27 18 52 39 42 29 35 31 27 22 37 34 19 20 57 49 50 37 46 25  
# 17 37 42 53 41 51 35 24 33 41 0 34 28 22 36 27 18 52 39 42 29 35 31 27  
# 22 37 34 19 20 57 49 50 37 46 25 17 37 42 53 41 51 35 24 33 41
```

```
#4. Sort the values for age.
```

```
sort(age)
```

```
#OUTPUTS
```

```
#17 18 19 20 22 22 24 25 27 27 28 29 31 33 34 34 35 35 36 37 37 37 39 41 41 42 42 46 49 50 51 52
53 57
```

#5. Find the minimum and maximum value for age.

```
min(age)
```

```
max(age)
```

#OUTPUTS

```
#min 17
```

```
#max 57
```

#6. Given Variables

```
data <- c(2.4,2.8,2.1,2.5,2.4,
          2.2,2.5,2.3,2.5,2.3,
          2.4,2.7)
```

#How many data points.

#Answer: 12

#Write the R code and its output.

```
data num[1:12] 2.4,2.8,2.1,2.5,2.4,
               2.2,2.5,2.3,2.5,2.3,
               2.4,2.7
```

#7. Generate a new vector for data where you double every value of data, what happened to the data?

```
data <- c(2.4*2,2.8*2,2.1*2,2.5*2,2.4*2,
          2.2*2,2.5*2,2.3*2,2.5*2,2.3*2,
          2.4*2,2.7*2)
```

#Answer: It doubles the value of every data in the vector.

```
#4.8 5.6 4.2 5.0 4.8 4.4 5.0 4.6 5.0 4.6 4.8 5.4
```

#8. GENERATE A SEQUENCE FOR THE FOLLOWING SCENARIO

#a. How many data points from 8.1 to 8.4?

#ANSWER: 43

#b. Write the Rcode and its Output from 8.1 to 8.4

#8.1 Integers from 1 to 100.

```
seq(1:100)
```

#OUTPUT

```
# 1  2  3  4  5  6  7  8  9 10 11 12 13 14 15 16 17 18
# 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36
# 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54
# 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72
# 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90
# 91 92 93 94 95 96 97 98 99 100
```

#8.2 Numbers from 20 to 60.

```
x <- 20:60
```

```
print(x)
```

#OUTPUT

```
# 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51
52 53 54 55 56 57 58 59 60
```

#8.3 Mean of the numbers from 20 to 60.

```
mean(20:60)
```

#OUTPUT: 40

#8.4 Sum of numbers from 51 to 91.

```
sum(51:91)
```

#OUTPUT: 2911

#8.5 Integers from 1 to 1000

```
seq(1:1000)
```

#OUTPUT: Integers from 1 to 1000

#C. For 8.5 find only maximum data points until 10.

```
max(1:10)
```

#OUTPUT: 10

#9. Print a vector with the integers between 1 and 100 that are not only divisible by 3,5, and 7 using the filter option.

```
Filter(function(i) { all(i %% c(3,5,7) != 0) }, seq(100))
```

```
#OUTPUT: 1 2 4 8 11 13 16 17 19 22 23 26 29 31 32 34 37 38 41 43 44 46 47 52 53 58 59 61 62 64 67
68 71 73 74 76 79 82 83 86 88 89 92
```

```
# 94 97
```

#10. Generate a sequence backwards of the Integers from 1 to 100.

#a. How many data points from 10 to 11?

#Answer: 101

#b. Rcode and output

```
seq(from =100, to =1)
```

```
#OUTPUT [1] 100 99 98 97 96 95 94 93 92 91 90 89 88 87 86 85 84 83
```

```
#82 81 80 79 78 77 76 75 74 73 72 71 70 69 68 67 66 65
```

```
#64 63 62 61 60 59 58 57 56 55 54 53 52 51 50 49 48 47
```

```
#46 45 44 43 42 41 40 39 38 37 36 35 34 33 32 31 30 29
```

```
#28 27 26 25 24 23 22 21 20 19 18 17 16 15 14 13 12 11
```

```
#10 9 8 7 6 5 4 3 2 1
```

#11. List all the natural numbers below 25 that are multiples of 3 or 5. Find the sum of these multiples.

```
sum((1:25)[((1:25)%3 == 0) | ((1:25)%5 == 0)])
```

```
#OUTPUT: 168
```

#12.Enter this statement

```
{ x <- 0+ x + 5 + }
```

```
#Describe the output:Error,unexpected '}' in " { x <- 0+ x + 5 + }"
```

#13.

```
score <- c(72, 86, 92, 63, 88, 89, 91, 92, 75,75, 77)
```

```
score[2]
```

```
score[3]
```

```
#OUTOUT : x[2]=86, x[3]= 92
```

#14.

```
a <- c(1,2,NA,4,NA,6,7)
```

```
print(a,na.print="-999")
```

```
#OUTPUT
```

```
#1  2 -999  4 -999  6  7
```

```
#It displays output based on the given vector, as I change the value for NA,
```

```
#the program also displays -999 that substitutes the NA.
```

```
#15.
```

```
class(x) <- "foo"
```

```
name = readline(prompt="Input your name: ")
```

```
age = readline(prompt="Input your age: ")
```

```
print(paste("My name is",name, "and I am",age ,"years old."))
```

```
print(R.version.string)
```

```
#What is the output of the above code?
```

```
#In the first line the program prompts to Input your name, I input my name and in the environment,
```

```
#name sets its value to my name that I input, on the second line I entered my age and same things  
happen in line 1,
```

```
#on line 3, the name and age that I enter in line 1 and 2 combined, and form a sentence.
```

```
#Lastly, line 4 displays the current version of R that I use.
```

```
#> name = readline(prompt="Input your name: ")
```

```
#Input your name: FLOREDA MAE SIATAN
```

```
#> age = readline(prompt="Input your age: ")
```

```
#Input your age: 19
```

```
#> print(paste("My name is",name, "and I am",age ,"years old."))
```

```
#[1] "My name is FLOREDA MAE SIATAN and I am 19 years old."
```

```
#> print(R.version.string)
```

```
#[1] "R version 4.2.1 (2022-06-23 ucrt)"
```