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#WORKSHEET1

#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 will double 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 fom 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 ouput base on the given vector, as I change the value for NA,

#the program also display -999 that substitute to 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?

#The first line in the program prompt to Input your name, I input my name and in the environment,

the name will sets its value to my name that I input, on the second line I input my age and the process will just be the same in line 1,

#line 3, the name and age that I enter in line 1 and 2 will be combined, and will form into a sentence.

#and Lastly, on line 4 it will display the current version of R that I use in this worksheet.

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

#Input your name: Krystal Rose M. Rizardo

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

#Input your age: 20

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

```
#[1] "My name is Krystal Rose M. Rizardo and I am 20 years old."

#>  print(R.version.string)

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