Q1: Write a R program using control operators to test whether following values are prime

numbers or not by providing a PRIME or NOT PRIME message as output :

A. 103

B. 82

C. 179

A1:

X<-c(103,82,179)

fname1<- function(p.num){

if (p.num==2){

print("Prime Number")

} else {

if (p.num%%(2:(p.num-1))!=0){

print("Prime Number")

} else {

print("Not prime number")

}

}

}

Q2: Write a function that to calculate BMI (Body Mass Index):

BMI for a person is defined as their body mass divided by the square of their height

The weight is in kilograms and the height in meters or

(The weight can be in pounds and the height in inches)\* 703

Check your BMI  :

A:2

fn<-function(x,y){

if (x/y<15)

{

print("Very Severly underweight")

} else if ((x/y)>=16 && (x/y)<=18.5)

{

print("Severly underweight")

} else if ((x/y)>=18.5 && (x/y)<=25)

{

print("Underweight")

} else if ((x/y)>=25 && (x/y)<=30)

{

print("Normal (healthy weight)")

} else if ((x/y)>=30 && (x/y)<=35)

{

print("Overweight")

} else if ((x/y)>=35 && (x/y)<=40)

{

print("Obese class 1")

} else if ((x/y)>=40 && (x/y)<=45)

{

print("Obese class 2")

} else if ((x/y)>=45 && (x/y)<=50)

{

print("Obese class 3")

}

}

Q3: Write a function called sum\_of\_cubes, that calculates the sum of cubes of the first n

natural numbers :

if we have two numbers : 1, 2 then sum of squares is 9 ( 1^3 + 2^3)

if we have three numbers : 1, 2, 3 then sum of squares is 36 ( 1^3 + 2^3 + 3^3)

f\_no<-function(x){

A:3

if (length(x)<3) return(9\*(x[1]^3)+(x[2]^3))

else if (length(x)>2) return(36\*(x[1]^3)+(x[2]^3))

}

Q4: Write a function to calculate the mode (highest frequency) of the following vector:

x = c(2,3,3,4,4,5,6,7,9,10)

a4:

f\_dup<-function(x){

for (i in unique(x)){

dup\_count=length(x[duplicated(x)])

} return(dup\_count)

}

f\_dup<-function(x){

for (i in unique(x)){

dup\_count=length(x[duplicated(x)])

} return(dup\_count)

}

Q: Write a function to calculate the no. of prime numbers of the following vector :

x = c(2,2,3,3,4,5,7,11,15,19,24,29)

A:

fname11<- function(p.num){

count=0

for (i in p.num){

if (p.num==2){

print("Prime Number")

count=count+1

} else {

if (p.num%%(2:(p.num-1))!=0){

print("Prime Number")

count=count+1

} else {

print("Not prime number")

}

} return(count)

}

Q:Perform below operations using Data.frame and Data.table

a. Load 2 files (.csv) and show it on screen ( F1 – empno, deptid,mgr\_id , F2 – empno,

sal, DOJ)

b. Perform equi join

c. Perform left outer join

d. Perform right outer join

e. Perform full outer join

f. Perform filter operation –Eg find all the rows for which col1 is null

g. Perform group by , sum, average operation

h. Perform (A “-“ B) operation

i. Create a derived column (empname in F2) – do some data transformation on that

j. Create a “working” test that example





