Q1 a:

def Newton-Rapson (f, g, x0, e, N):

x0 = float(x0)

e = float(e):

N = int(N)

step = 1

flag = 1

condition = True

while condition:

if g(x0) == 0.0:

print('didide by zero error!')

break x1 = x0f(x0)/g(x0) print('Iteration-%d, x1=%0.6f and f(x1)=%0.6f' % (step, x1, f(x1))) condition = abs(f(x1)) > e

x0 = x1

step step + 1

if step > N:

flag = 0

break

if flag == 1:

print('\nRequired root is:%0.8f % x1)

else:

print('\nNot convergent.')

def f(x):

return x \*\* 3-8\*x-4

def g(x):

return 3\* x \*\*2-8

Q2 a:

Def s13(a,b,n,f):

h=float(b-a)/n

I= f(a)+f(b)

for i in range(1,n):

k = a + i\*h

if i% 2==0:

I=I+2\*f(k)

else:

I=I+4\*f(k)

I= (h/3)\*1

return I

>>> def f(x):

return 1/(1+x\*\*2)

>>> s13(0,1, 4, f)

B:

def is\_prime(n):

if n < 2:

return False

for i in range(2, int(n \*\* 0.5) + 1):

if n % i == 0:

return False

return True

output: is\_prime(4)

False

is\_prime(5)

True

Q 3:

a:

def square():

for i in range(21,50):

s=i\*i

print("square is",s)

>>>square()

Output: square is 441

squre is 484

squre is 529

squre is 576

squre is 625

squre is 676

squre is 729

squre is 784

squre is 841

squre is 900

squre is 961

squre is 1024

squre is 1089

squre is 1156

squre is 1225

squre is 1296

squre is 1369

squre is 1444

squre is 1521

squre is 1600

squre is 1681

squre is 1764

squre is 1849

squre is 1936

squre is 2025

squre is 2116

squre is 2209

squre is 2304

squre is 2401

b:

global\_var="wonderful"

def f():

local\_var="bad"

print("python is ",local\_var)

print("python is",global\_var)

output: python is wonderful

f()

output:python is bad