1.#find the roots of a quadratic eqation

import cmath

first\_no=int(input("enter a no"))

second\_no=int(input("enter your data"))

third\_no=int(input("enter your data"))

d=(second\_no\*\*2)-(4\*first\_no\*third\_no)

root1=(-second\_no-cmath.sqrt(d))/(2\*first\_no)

root2=(-second\_no+cmath.sqrt(d))/(2\*first\_no)

print("the roots are:",(root1,root2))

2. #gcd of two no

def gcd( num1 ,num2):

if num1>num2:

temp=num2

else:

temp=num1

for data in range(1,temp+1):

if((num1%data==0) and (num2%data==0)):

gcd=data

return gcd

num1=int(input("first number"))

num2=int(input("enter your second no"))

answer= gcd(num1,num2)

print("your gcd is:", answer)

4. #lcm using while and if

num1= int(input("enter your number"))

num2=int(input("enter your number"))

if num1>num2:

max=num1

else:

max=num2

while (True):

if (max%num1==0 and max%num2==0):

print(max)

break;

max+=1

5. #LCM of two digit using gcd

#lcm using while and if

num1= int(input("enter your number"))

num2=int(input("enter your number"))

a=num1

b=num2

while (num2!=0):

temp=num2

num2=num1%num2

num1=temp

gcd=num1

lcm=(num1\*num2)//gcd

print(lcm)

6.

year=int(input("enter the year"))

if year%400==0 and year%100==0:

print(year, "is a centuary leap year")

elif year%4==0 and year%100!=0:

print(year,"is a leap year")

else:

print(year, "is not a leap year"

7. #to check the given number is a Armstrong number or not

str=0

num=int(input("enter your number"))

b=num

while num>0:

a=num%10

str=str+(a\*\*3)

num=num//10

print(str)

if str==b:

print("it is an Armstrong number")

else:

print("it is not an Armstrong number")

8. #to check a number is a pallendrome

# the number which will remain same when reversed

data=input("enter your data") # now you can input both string and a number

if data==data[::-1]:

print("it is a palindrome")

else:

print("it is not a palindrome")

9. data=input(" enter data to check for alphabet")

if data.isalpha():

print("it is a aphabet")

else:

print("it is not a an aplbhabet")

11.

n=int(input("how many row you want?"))

for row in range(n):

k=row+1

for space in range(n-row-1):

print(" ", end=" ")

for space in range(row+1):

print(k,end=" ")

k=k-1

if row>0:

for space in range(row-1):

print(" ",end=" ")

for space in range(row+1):

k=k+1

print(k,end=" ")

print()

for row in range(1,n):

k=n-row

for space in range(row):

print(" ",end=" ")

for space in range(n-row):

print(k,end=" ")

k=k-1

if row<(n-1):

for space in range(n-row-2):

print(" ",end=" ")

for space in range(n-row):

k=k+1

print(k,end=" ")

print()

15. a)

n=4

for i in range(n):

for j in range(i+1):

print(chr(j+65),end=" ")

print()

b) n=4

for i in range(n):

for j in range(i+1):

print(chr(i+65),end=" ")

print()

c) n=4

#for upper half

for i in range(n):

for k in range(n-i-1):

print('',end=" ")

for j in range(i+1):

print(chr(65+j),end=" ")

print()

#for lower half

for i in range(n):

for k in range(n+i-3):

print('',end=" ")

for j in range(n-i-1):

print(chr(65+j),end=" ")

print()

16)b) n=0 #floid’s triangle

for i in range(0,5):

for j in range(1,i+1):

n=n+1

print(n,end=" ")

print()

16 a) n=6

for i in range(1,n+1):

for j in range(0,n-i+1):

print(' ',end=' ')

c=1

for j in range(1,i+1):

print(' ',c,sep=' ',end=" ")

c=c\*(i-j)//j

print()