**Brick-1**

**How to swap two numbers using third variable**

a=int(input("Enter a number: "))

b=int(input("Enter a number: "))

c=a

a=b

b=c

print(a,b)

**Brick-2**

**How to swap two numbers without using third variable**

a=int(input("Enter a number: "))

b=int(input("Enter a number: "))

a=a+b

b=a-b

a=a-b

print(a,b)

**Brick-3**

**How to swap 3 numbers without using fourth variable**

a=int(input("Enter a number: "))

b=int(input("Enter a number: "))

c=int(input("Enter a number: "))

a=a+b+c

b=a-b-c

c=a-b-c

a=a-b-c

print(a,b,c)

**Brick-4**

**Swap 3 numbers input space separated without using fourth variable**

a,b,c=map(int, input().split())

a=a+b+c

b=a-b-c

c=a-b-c

a=a-b-c

print(a,b,c)

**Brick-5**

**To check whether number is positive, negative or zero**

a=int(input())

if(a>0):

print("Positive")

elif(a<0):

print("Negative")

else:

print("Zero")

**Brick-6**

**Grade of a student**

n=int(input())

if(n>100):

print("Invalid Input")

elif(n>=91 and n<=100):

print(“A+")

elif(n>=81 and n<=90):

print(“A")

elif(n>=71 and n<=80):

print(“B+")

elif(n>=61 and n<=70):

print(“B")

elif(n>=33 and n<=60):

print(“C")

else:

print("Fail")

**Brick-7**

**Grade of a student**

year=int(input())

if(year%400==0):

print(“Leap year”)

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

print(“Leap year ")

else:

print("Not a Leap year ")

**Brick-8**

**Table of 17**

i=17

while(i<=170):

print(i)

i=i+17

**Brick-9**

**All even number from 0 to 100**

i=0

while(i<=100):

print(i)

i=i+2

**Brick-9(b)**

**All odd number from 0 to 100**

i=1

while(i<100):

print(i)

i=i+2

**Brick-10**

**Sum of all natural number upto n using while loop**

n=int(input())

sum=0

i=1

while(i<=n):

sum=sum+i

i=i+1

print(sum)

**Brick-11**

**Sum of n natural number using formula**

n=int(input())

sum=n\*(n+1)/2

print(sum)

**Brick-12**

**Sum of squares of all natural number upto n using while loop**

n=int(input())

sum=0

i=1

while(i<=n):

sum=sum+(i\*\*2)

i=i+1

print(sum)

**Brick-13**

**Sum of n natural number using formula**

n=int(input())

sum=(n\*(n+1)\*(2\*n+1))/6

print(sum)

**Brick-14**

**Sum of cubes of all natural number upto n using while loop**

n=int(input())

sum=0

i=1

while(i<=n):

sum=sum+(i\*\*3)

i=i+1

print(sum)

**Brick-15**

**Sum of cubes of n natural number using formula**

n=int(input())

sum=( n\*(n+1)/2)\*\*2

print(sum)

**Brick-16**

**Sum of digits of a number**

n=int(input())

sum=0

while(n!=0):

b=n%10

sum=sum+b

n=n//10

print(sum)

**Brick-17**

**Reverse of digits of a number**

n=int(input())

sum=0

while(n!=0):

b=n%10

sum=sum\*10+b

n=n//10

print(sum)

**Brick-19**

**Square root of a number**

From cmath import math

n=int(input())

x=sqrt(n)

print(x)

**Brick-20**

**Power of a number**

a=int(input())

b=int(input())

x=a\*\*b

print(x)

**Brick-21**

**Count total digits in a number**

n=int(input())

count=0

while(n!=0):

n=n//10

count=count+1

print(count)

**Brick-22**

**Armstrong number**

n=int(input())

a=n

count=0

while(n!=0):

n=n//10

count=count+1

n=a

sum=0

while(n!=0):

b=n%10

sum=sum+b\*\*count

n=n//10

if(sum==a):

print(“Armstrong number”)

else:

print(“Not an Armstrong number”)

**Brick-23**

**Factorial of a number**

n=int(input())

fact=1

while(n!=0):

fact=fact\*n

n=n-1

print(fact)

**Brick-24**

**Strong number**

from math import factorial

n=int(input())

a=n

sum=0

while(n!=0):

b=n%10

sum=sum+factorial(b)

n=n//10

if sum==a:

print(“Strong number”)

else:

print(“Not a strong number”)

**Brick-25**

**Disariumnumber**

n=int(input())

a=n

count=0

while(n!=0):

n=n//10

count=count+1

n=a

sum=0

while(n!=0):

b=n%10

sum=sum+b\*\*count

count=count-1

n=n//10

if(sum==a):

print(“Disarium number”)

else:

print(“Not a Disarium number”)

**Brick-26**

**Product of digits of a number**

n=int(input())

prod=1

while(n!=0):

b=n%10

prod=prod\*b

n=n//10

print(prod)

**Brick-27**

**Spy number**

n=int(input())

sum=0

prod=1

while(n!=0):

b=n%10

prod=prod\*b

sum=sum+b

n=n//10

if(sum==prod):

print(“Spy number”)

else:

print(“Not a Spy number”)

**Brick-28**

**Sunny number**

from math import sqrt

n=int(input())

n=n+1

x=sqrt(n)

y=int(x)

if(x==y):

print(“Sunny number”)

else:

print(“Not a Sunny number”)

**Brick-28**

**Prime number**

n=int(input())

if(n<=1):

print("Prime number")

else:

flag=0

for i in range(2,n//2+1):

if(n%i==0):

print("Not Prime")

flag=1

break

if(flag==0):

print("Prime")

**Brick-30**

**Fibonacci Series**

n=int(input())

if(n==1):

print(0)

elif(n==2):

print(0)

print(1)

else:

print(0)

print(1)

n=n-2

a=0

b=1

while(n!=0):

c=a+b

print(c)

a=b

b=c

n=n-1

**Brick-31**

**Arithmetic progression nth term:**

a=eval(input(“enter first term: “))

d=eval(input(“enter common difference: “))

n=int(input(“enter nth term: “))

ans=a+(n-1)\*d

print(ans)

**Brick-32**

**Sum of n terms of AP**

a=eval(input(“enter first term: “))

d=eval(input(“enter common difference: “))

n=int(input(“enter nth term: “))

ans=(n\*(2\*a+(n-1)\*d))/2

print(ans)

**Brick-33**

**Geometric progression nth term:**

a=eval(input(“enter first term: “))

r=eval(input(“enter common difference: “))

n=int(input(“enter nth term: “))

ans=a\*pow(r,n-1)

print(ans)

**Brick-34**

**Sum of n terms of GP**

a=eval(input(“enter first term: “))

r=eval(input(“enter common difference: “))

n=int(input(“enter nth term: “))

if r>1:

ans=(a\*((r\*\*n)-1))/(r-1)

else:

ans=(a\*(1-(r\*\*n)))/(1-r)

print(ans)

**Brick-35**

**Printing factors of number**

from math import sqrt

n=int(input())

x==int(sqrt(n))

l=[]

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

if n%i==0:

print(i)

if(i!=sqrt(n)):

l.append(int(n//i))

l=l[::-1]

for i in l:

print(i)