1.

```
name = input("Enter name: ")
print("Hello" , name)
```

2.

```
str1 = "Hello"
str2 = "Deepesh"
print(str1 + " " + str2)
```

3.

```
dollar = int(input("Enter prize in dollars: "))
inr = dollar * 75
print(dollar, " $", " is", inr, " rupees")
```

4.

```
num = int(input("Enter a number: "))
print("Square root of", num, " is ", (num**0.5))
```

5.

```
import math

num = int(input("Enter a number: "))
print("Square root of", num, " is ", math.sqrt(num))
```

6.

```
n1 = int(input("Enter number 1: "))
n2 = int(input("Enter number 2: "))
n3 = int(input("Enter number 3: "))
if n1 > n2 & n1 > n3:
    print(n1, " is greaatest")
elif n2 > n1 & n2 > n3:
    print(n2, " is greaatest")
else:
    print(n3, " is greaatest")
```

7.

```
year = int(input("Enter a year: "))
if year % 4 == 0:
    print("It is leap year")
else:
    print("Not")
```

8.

```
num = int(input("Enter a number: "))
if num % 2 == 0:
    print("Even")
else:
    print("Odd")
```

9.

```
age = int(input("Enter your age: "))
eligible = "Yes" if age >= 18 else "No"
print("Are you eligible to vote: " + eligible)
```

10.

```
base = float(input("Enter base: "))
height = float(input("Enter height: "))
print("Area of triangle: ", 0.5 * base * height)
print()

side = float(input("Enter side of square: "))
print("Area of square: ", side * side)
print()

l = float(input("Enter length: "))
b = float(input("enter breadth: "))
print("Area of rectangle: ", l * b)
```

11.

```
num = float(input("Enter number: "))
print("Square of number is: ", num * num)
print("Cube of number is: ", num * num * num)
```

12.

```
num = float(input("enter number: "))
if num > 0:
    print("+ve")
elif num < 0:
    print("-ve")
else:
    print("Zero")
```

13.

```
try:
    num = int(input("Enter a number: "))
    if num > 1:
        for i in range(2, num):
            if num % i == 0:
                print("Not prime")
                break
        else:
            print("Prime")
    else:
        print("Not prime")
except:
    print("enter a number only")
```

14.

```
m1 = int(input("Enter marks of subject 1: "))
m2 = int(input("Enter marks of subject 2: "))
m3 = int(input("Enter marks of subject 3: "))
m4 = int(input("Enter marks of subject 4: "))
m5 = int(input("Enter marks of subject 5: "))
total = m1 + m2 + m3 + m4 + m5
percentage = (total / 350) * 100
if percentage > 90:
    grade = "A"
elif percentage > 80:
    grade = "B"
elif percentage > 70:
    grade = "C"
elif percentage > 60:
    grade = "D"
else:
    grade = "E"
print("Total: ", total)
print("Percentage: ", percentage)
print("Grade: ", grade)
```

15.

```
list = [1, 2, 3, 4]
print(list[::-1])
for i in range(3, -1, -1):
    print(list[i], end=" ")
```

16.

```
def isPrime(num):
    if num > 1:
        for i in range(2, num):
            if num % i == 0:
                return False
        else:
            return True
    else:
        return False


list = [1, 2, 3, 4, 5]
prime = False
for i in list:
    if isPrime(i):
        print(i, " is a prime number")
        prime = True
    else:
        prime = False
```

17.

```
import random

list = []
n = int(input("Enter number:"))
for i in range(n):
    list.append(random.randint(1, 50))
print("List: ", list)
```

18.

```
n = int(input("Enter number:"))
for i in range(1, 21):
    print(n, "*", i, "=", (n * i))
```

19.

20.

```
for i in range(3):
    for j in range(2 * i + 1):
        print("*", end=" ")
    print()
```

21.

```
for i in range(3, 0, -1):
    for j in range(2 * i - 1):
        print("*", end=" ")
    print()
```

22.

```
for i in range(4):
    for j in range(i + 1):
        print("*", end=" ")
    print()
```

23.

```
for i in range(1, 5):
    for j in range(1, i + 1):
        print(j, end=" ")
    print()
```

24.

```
for i in range(1, 6):
    for j in range(1, i + 1):
        print(i, end=" ")
    print()
```

25.

```
def reverse(n):
    rev = 0
    while n > 0:
        rem = n % 10
        rev = rev * 10 + rem
        n = n // 10
    print("Reverse: ", rev)


n = int(input("Enter number: "))
reverse(n)
```

26..

```
n = int(input("Enter number: "))
rev = int(str(n)[::-1])
print(rev)
```

27.

```
n = input("Enter number: ")
sum = 0
for i in n:
    sum += int(i)
print("Sum: ", sum)
```

28

```
n = input("Enter number: ")
sum = 1
for i in n:
    sum *= int(i)
print("Sum: ", sum)
```

29.

```
n = int(input("Enter number: "))
rev = 0
temp = n
while n > 0:
    rem = n % 10
    rev = rev * 10 + rem
```

```
    n = n // 10
print("Reverse: ", rev)
if temp == rev:
    print("Palindrome")
else:
    print("Not")
```

30.

```
def isPalin(n):
    return n == n[::-1]


n = input("Enter number:")
if isPalin(n):
    print("P")
else:
    print("Not")
```

31.

```
n = int(input("Enter number:"))
sum = 0
temp = n
while n > 0:
    rem = n % 10
    sum += rem**3
    n //= 10

if temp == sum:
    print("Arm")
else:
    print("Not")
```

32.

```
import numpy

mat1 = numpy.array([[1, 2], [2, 1]])
mat2 = numpy.array([[1, 2], [2, 1]])
print(mat1 + mat2)
print(mat1 - mat2)
print(mat1 * mat2)
print(mat1 / mat2)
```

33.

```
list = [1, 2, 3, 4, 5]
print(max(list))
```

34.

```
list = [1, 2, 3, 4, 5]
list.sort(reverse=True)
print(list)
```

35.

```
set1 = {1, 2, 3, 4, 5}
set2 = {4, 5, 6, 7, 8}

print("Set 1: ", set1)
print("Set 2: ", set2)
print()

union_set = set1.union(set2)
intersection_set = set1.intersection(set2)
difference_set = set1.difference(set2)
symm_diff = set1.symmetric_difference(set2)

print("Union: ", union_set)
print("Intersection: ", intersection_set)
print("Difference: ", difference_set)
print("Symmetric Difference: ", symm_diff)
```

36.

```
name = input("Enter your name: ")
age = int(input("Enter your age: "))
dob = input("Enter your date of birth (DD-MM-YYYY): ")
details = {"Name": name, "Age": age, "Date of Birth": dob}
print("\nUser Details:")
print(details)
```

37.

```
n = int(input("Enter size of tuple: "))
tup = ()
for i in range(n):
    item = input("Enter item: ")
    tup += (item,)

tup = tuple(tup)
print(tup)
```

38.

39.

```
str = input("Enter string: ")
lower = 0
upper = 0
digit = 0
for i in str:
    if i.islower():
        lower += 1
    elif i.isupper():
        upper += 1
    elif i.isdigit():
        digit += 1
print(lower)
print(upper)
print(digit)
```

40.

```
while True:
    lower = False
    upper = False
    special_char = False
    password = input("Enter a password: ")

    for char in password:
        if char.isupper():
            upper = True
        elif char.islower():
            lower = True
        elif char in "!@#$%^&*":
            special_char = True

    errors = []
```

```
    if not lower:
        errors.append("Password must contain at least 1 lowercase alphabet.")
    if not upper:
        errors.append("Password must contain at least 1 uppercase alphabet.")
    if not special_char:
        errors.append("Password must contain at least 1 special character.")
    if len(password) < 8:
        errors.append("Password must be 8 characters long")

    if errors:
        print("\n".join(errors))
    else:
        print("Password is Valid")
        break
        print("Please try again!!")
```

41.

```
def fact(n):
    fact = 1
    if n == 0:
        return 1
    else:
        for i in range(2, n + 1):
            fact *= i
    print(fact)


n = int(input("Enter number: "))
fact(n)
```