Q1

Forloop01.py

```python
#Program to illustrate simple for loop
numbers = [1, 10, 20, 30, 40, 50]
sum = 0
#  Find sum of all the numbers using for loop
for i in numbers:
    sum+=i
print ("The sum of numbers is", sum ) # print sum here


colors = ['red', 'orange', 'green', 'yellow', 'white', 'violet']

# Similarly iterate over the given colors and print the colors
for i in colors:
    print(i)
```

Q2

PrintRange.py

```python
#Program to illustrate simple range function

# take the input num from the user
num=int(input("num: "))
for i in range(1, num + 1, 2):
    print(i)
# print i
```

Q3

Multiplication.py

```python
# Multiplication table
x = int(input("x: "))
y = int(input("y: "))

# Fill in the missing code below to print a multiplicati
# If y is more than 20, print the relevant message as pe
for i in range(1, y+1 ):
    if i<=20:
        print("{0} * {1} = {2}".format(x,i,x*i))

    else:
        print("rows is limited to 20")
        exit()
```

Q4

MatrixTranspose.py

```python
matrix = [[1, 2, 3, 4], [5, 6, 7, 8], [9, 10, 11, 12]]

# find the transpose of the matrix and print the result as
row=len(matrix)
col=len(matrix[0])

t=[[0]*row for i in range(col)]
print("matrix:",matrix)
for i in range(0,col):
    for j in range(0,row):
        t[i][j]=matrix[j][i]
print("transposed:",t)

```

Q5

Perfectnum.py

```python
n=int(input("n: "))
fac=[]
for i in range(1,n):
    if(n%i==0):
        fac.append(i)
sum=0;
for i in fac:
    sum+=i
print("factors:",fac)
if(sum==n):
    print("perfect number")
else:
    print("not perfect number")
```

Q6

Multable10.py

```python
#Program to print value of pi 1 to 25 decimals
import math
pi = math.pi

# write your code here
n=int(input("n: "))
for i in range(1,n+1):
    print("{0:.{1}f}".format(pi,i))
```

Q7

: shown

ValidExp.py

```
1  str=str(input("str: "))
2  f=0
3  b=0
4  for i in str:
5      if(i=='('):
6          f+=1
7      elif(i==')'):
8          b+=1
9  if(f==b):
10     print("valid and depth:",f)
11 else:
12     print("not valid and errors:",abs(f-b))
```