

Question 1:

1. This code is saved in Q1.py
2. This program allows the user to input his or her Wanted Final Account Value, Annual Interest Rate and Number of Years to calculate needed Initial Deposit Amount:
 - a. Wanted final account value should be positive real numbers.
 - b. Annual interest rate should be positive real numbers in percentage.
 - c. Number of years should be positive integers.
3. Execute as followings:

```
D:\OneDrive - CUHK-Shenzhen\Python for VSC>D:/Python39/python.exe "d:/OneDrive - CUHK-Shenzhen/Python for VSC/CSC 1001/Assignment 1/Q1.py"
Enter the final account value: 10000
Enter the annual interest rate: 2.3
Enter the number of years: 5
The initial value is 8925.279628922432
```

Question 2:

1. This code is saved in Q2.py
2. This program allows the user to input a number and print its each digit by lines:
 - a. The number should be positive integers.
3. Execute as followings:

```
D:\OneDrive - CUHK-Shenzhen\Python for VSC>D:/Python39/python.exe "d:/OneDrive - CUHK-Shenzhen/Python for VSC/CSC 1001/Assignment 1/Q2.py"
Enter a POSITIVE INTEGER: 742
7
4
2
```

Question 3:

1. This code is saved in Q3.py
2. This program allows the user to input a number m, and then find the smallest integer n such that n^2 is greater than m.
3. Execute as followings:

```
d:/OneDrive - CUHK-Shenzhen/Python for VSC/CSC 1001/Assignment 1/Q3
.py"
Enter the number m: 23
5
```

Question 4:

1. This code is saved in Q4.py
2. This program allows the user to input a positive integer n, and then output a table of m, m+1 and m^{m+1} from 1 to n.
3. Execute as followings:

```
Enter a POSITIVE INTEGER N: 5
m      m+1      m**(m+1)
1       2        1
2       3        8
3       4       81
4       5     1024
5       6    15625
```

Question 5:

1. This code is saved in Q5.py
2. This program allows the user to input a positive integer n which is greater than 2, and then output all prime numbers that is smaller than n.
3. Execute as followings:

```
Enter a POSITIVE INTEGER N: 50
The prime numbers smaller than 50 include:
2      3      5      7      11      13      17      19
23     29     31     37     41     43     47
```

Question 6:

1. This code is saved in Q6.py
2. This program allows the user to determine the end-point of an integral of sin, cos or

tan, and then choose the n which is used in the formula affecting the accuracy to estimate the result.

3. Execute as followings:

```
Please choose a function from sin, cos and tan: sin
Please enter a POSITIVE INTEGER n: 1000
Please enter the Smaller endpoint a: 0
Please enter the Larger endpoint b: 3.1415926535
2.000000822467271
```