

# Answer for *Function*

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## Ques 1.

1. What is the output of the following program? Please predict and then try.

```
1  int main()
2  {
3      int i = 0, j = 0;
4      for (i = 0; i < 7; i++)
5      {
6          for (j = 0; j < 6; j++)
7          {
8              printf("i=0 \n");
9              if (i > 1)
10                 break;
11          }
12          printf("nested time \n");
13      }
14      return 0;
15 }
```

The output of the program is

```
1  i=0
2  i=0
3  i=0
4  i=0
5  i=0
6  i=0
7  nested time
8  i=0
9  i=0
10 i=0
11 i=0
12 i=0
13 i=0
14 nested time
15 i=0
16 nested time
17 i=0
18 nested time
19 i=0
20 nested time
21 i=0
22 nested time
23 i=0
24 nested time
```

## Ques 2.

2. Write a function to find the square of a number. The input is the number itself and the output is its square.

Here's my program.

```
1  #include <stdio.h>
2  // The function to calculate the square of a number.
3  double square(double input) {
4      return input*input;
5  }
6  // The main function.
7  int main(void) {
8      printf("Input a number : ");
9      int input;
10     scanf("%d",&input);
11     printf("The square of the number is %lf",square(input));
12     return 0;
13 }
```

## Ques 3.

3. Write a main function to find the sum of the series  $1!/1 + 2!/2 + 3!/3 + 4!/4 + 5!/5$ . A function should be defined calculating  $n!$ .

Here's my program.

```
1  #include <stdio.h>
2  // The function designed for calculating N!
3  unsigned int factorial(unsigned int N) {
4      int Answer = 1;
5      for (int i=1; i<=N; i++)
6          Answer *= i;
7      return Answer;
8  }
9  // THE main function
10 int main(void) {
11     int Answer=0;
12     for (int i=1; i<=5; i++) {
13         Answer += factorial(i)/i;
14     }
15     printf("1!/1 + 2!/2 + 3!/3 + 4!/4 + 5!/5 = %d\n",Answer);
16     return 0;
17 }
```