```
... \label{thm:locuments} \label{thm:locuments} Iw02 \label{thm:locuments
```

```
1
   2 /*
                                                                       */
3 /*
                                                                       */
         A sample solution for Homework-2 Part-1.
                                                                       */
4 /*
 5 /*
                                                                       */
 /* Include libraries */
9 #include <stdio.h>
10 #include <math.h>
11
12 #define N 10
                             /* max n */
13 #define EPSILON 0.0001
                             /* A very small error range for comparing real numbers*/
14 #define NOT DEFINED -1
                             /* Function f returns -1 if its inputs are not valid */
15
16 /* Computes sqrt(z * ((1 - (n + 1) * pow(z, n) + n * pow(z, n + 1)) / (pow((1 - z), n + n)))) / (pow((1 - z), n + n))))
   2))) + \exp(-z * n)) for a given z and n */
17 double f(double z, double n);
18
19 int main()
20 {
       /* Variable decleration */
21
22
       double z;
23
       int i; /* counter */
24
       double result;
25
       printf("z: ");
26
27
       scanf("%1f", &z);
28
29
       for (i = 1; i <= N; ++i)
30
          result = f(z, i);
31
32
33
          if ((result >(NOT_DEFINED - EPSILON)) && (result <(NOT_DEFINED + EPSILON)))</pre>
              return NOT_DEFINED;
34
35
          printf("f(%.1f, %2d) = %20.4f \n", z, i, result);
36
37
       }
38
39
40
       return 0;
41 }
42
43 /* Computes sqrt(z * ((1 - (n + 1) * pow(z, n) + n * pow(z, n + 1)) / (pow((1 - z), > 
   2))) + \exp(-z * n)) for a given z and n */
44 /* It returns -1 if there in an unvalid input */
45 double f(double z, double n)
46 {
47
       double result;
                          /* A local variable for holding the computed result */
48
       if ((z < 0) \mid | (z == 1)) /* f is not defined for negative real numbers and 1. */
49
50
51
           printf("Function f is not defined for z = %f!\n", z);
52
           return NOT_DEFINED;
53
       }
```

54

```
...Vural\Documents\Visual Studio 2010\Projects\lw02\lw02\main.c
```

/* compute the function */

2))) + exp(-z * n));

```
2
result = sqrt(z * ((1 - (n + 1) * pow(z, n) + n * pow(z, n + 1)) / (pow((1 - z), > n + 1))) / (pow((1 - z), > n + 1))))
```

```
return result;
60
61
```

62 } 63

56

57

58 59