Computing Homework 22/10/13 Part 1: Base Converter

Objective
Write a program in C that will ask for a base to encode a number into, then ask for the number, and convert it into the specified base, and exit.
Otherwise, it goes back the the beginning of the confirmation loop.

How to do it
I will have 2 different functions that I will use to achieve the objective:
- findHighestPower()
    - This will be used to find the highest power of base that is bigger than the number. Unless the number is smaller than a tenth of the bigger power, in which case it is the power that is smaller than the number.
- convertNum()
    - This will be used to output the number in the required base.

After getting input from main(), I will pass the base and the number to convertNum(), which will use findHighestPower() unless the input base was base 1.

How to test it
I will test this program 10 times, with these passwords:

Base	Number	Output
1	1	I
2	2	10
3	4	11
4	6	12
5	8	13
6	10	14
7	12	15
8	14	16
9	16	17
10	18	18

If the program outputs these results, I will conclude that I have completed the objective.

Test results
After testing my program, I got these results:

```
Please input the desired base. It must be between 10 and 1.
Base:1
Base input as: 1
Please input the number you wish to convert from base 10.
Number:1
I
Please input the desired base. It must be between 10 and 1.
```

```
Base:2
Base input as: 2
Please input the number you wish to convert from base 10.
Number:2
10
Please input the desired base. It must be between 10 and 1.
Base:3
Base input as: 3
Please input the number you wish to convert from base 10.
Number:4
11
Please input the desired base. It must be between 10 and 1.
Base:4
Base input as: 4
Please input the number you wish to convert from base 10.
Number:6
12
Please input the desired base. It must be between 10 and 1.
Base:5
Base input as: 5
Please input the number you wish to convert from base 10.
Number:8
13
Please input the desired base. It must be between 10 and 1.
Base:6
Base input as: 6
Please input the number you wish to convert from base 10.
Number:10
14
Please input the desired base. It must be between 10 and 1.
Base:7
Base input as: 7
Please input the number you wish to convert from base 10.
Number:12
15
Please input the desired base. It must be between 10 and 1.
Base:8
Base input as: 8
Please input the number you wish to convert from base 10.
Number:14
16
Please input the desired base. It must be between 10 and 1.
Base:9
Base input as: 9
Please input the number you wish to convert from base 10.
Number:16
17
Please input the desired base. It must be between 10 and 1.
Base:10
Base input as: 10
Please input the number you wish to convert from base 10.
Number:18
18
```
 As you can see, it is the same as the required results.
I can therefore conclude that I have completed the objective.