

# Programming Design, Spring 2015

## Suggested Solution for Homework 5

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### Problem 1

- (a) 62
- (b)  $f(n, m, a, b) = (n - 1) \times a + \lceil \sqrt[m]{n} \rceil \times b + 1$ , where  $\lceil x \rceil$  is the smallest integer that is not less than  $x$ .
- (c) The reason is that in `n--` statement, the program will return the value of `n` before executing `--` operation. If the `n = 1` statement is replaced by `n--`, the program will invoke the function with the same value of `n` again and then executes the `--` operation. Therefore, the same value of `n` is passed repeatedly to the function and an infinite loop is caused.

### Problem 2

Please see the 150501.cpp file.

### Problem 3

Please see the 150502.cpp file.