Exercises 10.1

Exercises 1-6 assume ASCII representation of characters and the following function f():

Algorithm 1: void `f`(char *ch*)

```
   /* This code is formatted differently from the book (and is not exactly C++ code) due to
      the program used to create this worksheet.  */
1  if ((‘A’ ≤ ch) && (ch ≤ ‘H’)) then
2  |  f(ch - 1);
3  |  cout << ch;
4  else
5  |  cout << endl;
6  end
```

Tell what output will be produced by the function call.

1. f('C')

2. f('G')

3. f('3')

4. f('C') if ch - 1 is replaced by ch + 1 in the function.

5. f('C') if the output statement and the recursive call to f() are interchanged.

6. f('C') if a copy of the output statement is inserted before the recursive call.

Determine what is calculated by the recursive functions in Exercises 11-15.

13.

Algorithm 2: unsigned `f`(unsigned n)

```
1 if (n < 2) then
2 |   return 0;
3 else
4 |   return 1 + f(n/2);
5 end
```

14.

Algorithm 3: unsigned `f`(unsigned n)

```
1 if (n == 0) then
2 |   return 0;
3 else
4 |   return f(n/10) + n%10;
5 end
```