2.7

1. 1) First line runs code constant c times, so the running time is also c. Second line the loop runs the block n times. In the block the code runs constant c time, so running time is a c. So the running time for the loop is c\*n. So, the running time of the program is c + c\*n = O(N).

2) First line runs code constant c times, so the running time is also c. Second line the first loop runs the block n times. third line the second loop runs the block n times. And in the block the code runs constant c time, so running time is a c. So the running time for the loops is n \* n \* c = . So, the running time of the program is c +  =O( ).

3) First line runs code constant c times, so the running time is also c. Second line the first loop runs the block n times. Third line the second loop runs the block n \* n times. And in the block the code runs constant c time, so running time is a c. So the running time for the loops is n \* \* c = . So, the running time of the program is c + = O().

4) First line runs code constant c times, so the running time is also c. Second line the first loop runs the block n times. Third line the second loop runs the block times. And in the block the code runs constant c time, so running time is a c. So the running time for the loops is n \* \* c = . So, the running time of the program is c + = O().

5) First line runs code constant c times, so the running time is also c. Second line the first loop runs the block n times. Third line the second loop runs the block times. The forth line the third loop runs the block . And in the block the code runs constant c time, so running time is a c. So the running time for the loops is n \* \* c = . So, the running time of the program is c + = O().

2.14

a) Imply the function poly = ploy\*x + a[i]

0 \* 3 + 4 = 4

4 \* 3 + 8 = 20

20 \* 3 + 0 = 60

60 \* 3 + 1 = 181

181 \* 3 + 2 = 545

f(3) = 4 \* + 8 \* + 3 + 2 = 324 + 216 + 5 = 545

The results for both function and algorithm are equal. The value is 545.

b) ) First line runs code constant c times, so the running time is also c. Second line the loop runs the block n times. In the block the code runs constant c time, so running time is a c. So the running time for the loop is c\*n. So, the running time of the program is c + c\*n = O(N).