Nathan Borchelt

345 Assignment 2

1.

* 1. O(n2)
  2. O(n3)
  3. O(n2)
  4. O(n3 log n)
  5. O(2n) 2.

function foo(n)

{

int i=0; //+1

while(i<n) //do this n times i<n +1

{

System.out.println(i); +3

i++; //+1

}

}

//n+6 so O(n)

3. function bar(n)

{

//these loops being within each other mean that they multiply each other

for(int j=0; j<n; j+=2) //n +3

{

for(int i=1; i<n; i\*=2)//due to multiplication lg(n)

{

System.out.println(i\*j);//+4

}

}

for(int i=0; i<100; i++)// add n to the first part

{

System.out.println(i);//+1

}

}

n\*(lg(n)+4+n

n\*lg(n)+4n+n

n\*lg(n)+5n

O(n\*log(n))