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345 Assignment 2

1.
    a. $O(n^2)$
    b. $O(n^3)$
    c. $O(n^2)$
    d. $O(n^3 \log n)$
    e. $O(2^n)$
2.
    a. function foo(n)
```
{
    int i=0; //+1
    while(i<n) //do this n times
    {
        System.out.println(i);
        i++; //+1
    }
}
```
    //n+2 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
    {
        for(int i=1; i<n; i*=2)//n
        {
            System.out.println(i*j);//plus 1 to the
    second n
        }
    }

    for(int i=0; i<100; i++)// add this to the first part
    {
        System.out.println(i);
    }
}
```
    $n(n+1)+n$
    $n^2 + n + n$
    $n^2 + 2n$
    $O(n^2)$