CPSC 131 Homework 2 solutions

**Max points: 9**

## #1

**Choose the equivalent Big O notation for the given functions. [1 point each]**

1. 2n + 3

O(1)

**O(n)**

O(n2)

O(log n)

1. n2 + n + 1

O(1)

O(n)

**O(n2)**

O(log n)

1. n2 + log n

O(1)

O(n)

**O(n2)**

O(log n)

## #2

**Choose the Big O complexity for each of the given pieces of code. Give a 1-2 sentence explanation of your reasoning. [2 points each]**

1.



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

*The code has to go through the loop exactly n times.*

2.



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

*There are two nested loops, each of length n. Therefore, the if statements in the inner loop will be executed n\*n times.*

3.



* 1. O(1)
  2. **O(n)**
  3. O(n2)

*The two loops are not nested but are executed one after the other. Therefore, the summations will happen 2\*n which is also O(n).*