

Big O Exercises

Exercise 1

Analyze the following code fragments and determine the Big O Notation. Write your answers down on paper. See me if you would like to check your completed work.

```
// 1a
```

```
for(int i = 0; i < n; i++) {  
    sum++;  
}
```

```
// 1b
```

```
for(int i = 0; i < n; i += 2) {  
    sum++;  
}
```

```
// 1c
```

```
for(int i = 0; i < n; i++) {  
    for( int j = 0; j < n; j++)  
        sum++;  
}
```

```
// 1d
```

```
for(int i = 0; i < n; i++) {  
    for( int j = i; j < n; j++) {  
        sum++;  
    }  
}
```

```
// 1e
for(int i = 0; i < n; i += 2) {
    sum++;
}
for(int j = 0; j < n; j++) {
    sum++;
}
```

```
// 1f
for(int i = 0; i < n; i++) {
    for( int j = 0; j < n * n; j++)
        sum++;
}
```

```
// 1g
for( int j = 1; j < n; j *= 3)
    sum++;
}
```

```
//1h
for(int i = 0; i < 2 * n; i++) {
    for( int j = 1; j < n; j *= 2)
        sum++;
}
```

```
// 1i
for(int i = 0; i < n; i++)
    for( int j = 0; j < 2; j++)
        sum++;
}

// 1j
for(int i = 0; i < n; i++)
    for( int j = 0; j < n * n; j++)
        for(int k = 0; k < n; k++)
            sum++;
```

```
// 1k
for(int i = 0; i < n; i++)
    for( int j = 0; j < n * n; j++)
        for(int k = 0; k < j; k++)
            sum++;
```