

Worksheet on Algorithm Analysis

For each code snippet below, determine its big-O. Take S as a constant-time operation.

1.

```
for(int k=0; Math.sqrt(k)<n; k++)  
    S;
```

2.

```
for(int k=0; k*k<n; k++)  
    S;
```

3.

```
for(int k=0; k<n; k++)  
    for(int j=0; j<n; j++)  
        S;
```

```
4. for(int i=0; i<n; i++)  
    for(int j=i; j<n; j++)  
        S;
```

```
5. int k = 1;  
    for(int j=0; j<n; j++)  
        k *= 2;  
  
    for(int j=0; j<k; j++)  
        S;
```