

(a)

```
public int calcSum1(int n) {  
    int sum = 0;  
    for (int i = 1; i < n; i *= 2) {  
        sum++;  
    }  
    return sum;  
}
```

(b)

```
public int calcSum2(int n) {  
    int sum = 0;  
    for (int i = 1; i < n; i++) {  
        for (int j = 1; j < n/i; j++) {  
            sum++;  
        }  
    }  
    return sum;  
}
```

P.S: Questions b and d are challenging. You could just do it for fun.

(c)

```
public int calcSum3(int n) {  
    int sum = 0;  
    for (int i = n; i > 1; i--) {  
        for (int j = i; j > 1; j=j/3) {  
            sum++;  
        }  
    }  
    return sum;  
}
```

(d)

```
public int calcSum4(int n) {  
    int sum = 0;  
    for (int i = 0; i < n; i++) {  
        for (int j = 1; j < i*i; j++) {  
            if(j % i == 0) {  
                for(int k = 0; k < j; k++) {  
                    sum++;  
                }  
            }  
        }  
    }  
    return sum;  
}
```

- Answer: 1. $O(\log(n))$
2. $O(n \log(n))$
3. $O(n \log(n))$
4. $O(n^4)$