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Pledge: “I pledge my honor that I have abided by the Stevens Honor System”

Use the Master Theorem to find the asymptotic complexity of each recurrence relation listed below.

a=1, b=2, d=2

1 < 2^2   
Complexity:

a=4, b=2, d=2

4 = 2^2   
Complexity:

a=3, b=3, n=1/2

3>3^1/2  
Complexity:

For each function below, write the recurrence relation for its running time (with the correct asymptotic symbol for the *f(n)* part of the relation) and then use the Master Theorem to find its complexity.

1. **int** f(**int** arr[], **int** n) {

**if** (n == 0) {

**return** 0;

}

**int** sum = 0;  
 **for** (**int** j = 0; j < n; ++j) {  
 sum += arr[j];  
 }  
 **return** f(arr, n / 2) + sum + f(arr, n / 2);  
}  
  
Recurrence: T(n)= 2T(n/2) +

a=2, b=2, n=1

2=2^1

Complexity:

1. **void** g(**int** n, **int** arrA[], **int** arrB[]) {

**if** (n == 0) {

**return**;

}

**for** (**int** i = 0; i < n; ++i) {  
 **for** (**int** j = 0; j < n; ++j) {  
 arrB[j] += arrA[i];

}

}  
 g(n / 2, arrA, arrB);  
}

Recurrence: T(n)= T(n/2) +

a=1, b=2, d=2

1<2^2

Complexity: