

CS21201 Discrete Structures
Tutorial Problems
Recurrence Relations

1. How many lines are printed by the call $f(n)$ for an integer $n \geq 0$?

```
void f ( int n )
{
    int m;
    printf("Hi\n");
    m = n - 1;
    while (m >= 0) { f(m); m -= 2; }
}
```

2. Solve for the following divide-and-conquer recurrence:

$$: T(n) = 2T(n/2) + \frac{n}{\log n} \text{ with } T(1) = 1.$$

3. Let $a_n = 7a_{n/2} - 6a_{n/4}$, $a_1 = 2$, $a_2 = 7$. Find a_n .
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