

Quiz 5

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For each k , recursive Hanoi has to call solve method for $2^{(k-1)}$ recursively.

As for dynamic Hanoi, the times of calling of solve method is depends on k . When $k = 1$ the times of call is 3, when $k = 2$ the times of call is 7 and when $k \geq 3$ the time of call is $6k-3$.

Recursive Hanoi has no memorization, so it has to recursively call every solve method. For example when $k=3$

```
                solve(3,S,I,D)
            solve(2,S,D,I)      solve(2,I,S,D)
    solve(1,S,D,I) solve(4,I,S,D)  solve(4,S,D,I) solve(4,I,S,D)
```

The dynamic Hanoi has the memorization. Since it only has 6 possibilities that SI,SD,IS,ID,DS,DI. So the memorization can be saw as a 6 column array. Since we memorize the step for k if the value in array is null. So the times of call is linear and is $6k-3$