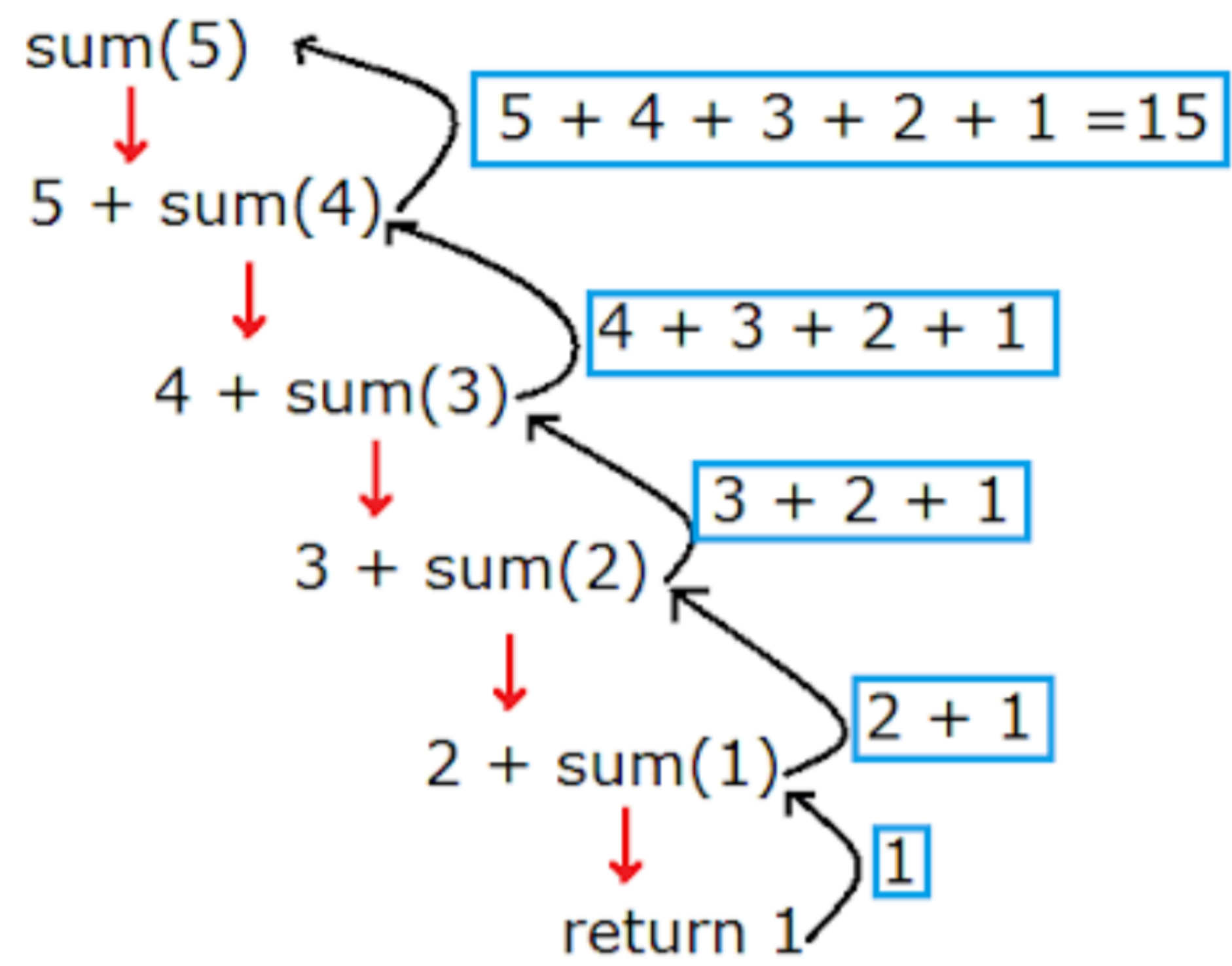


```

1 int sum(int n) {
2     if (n == 0) {
3         return 0;
4     } else {
5         return n + sum(n - 1);
6     }
7 }

```



$$F(n) = \begin{cases} 0, & n=0 \\ n + F(n-1), & n \geq 1 \end{cases}$$

+ let $n=5$:

$$\Rightarrow \text{sum}(5) = 5 + \text{sum}(5-1)$$

$$= 5 + \text{sum}(4) = 5 + 4 + \text{sum}(4-1)$$

$$= 5 + 4 + \text{sum}(3) = 5 + 4 + 3 + \text{sum}(3-1)$$

$$= 5 + 4 + 3 + \text{sum}(2) = 5 + 4 + 3 + 2 + \text{sum}(2-1)$$

$$= 5 + 4 + 3 + 2 + \text{sum}(1) = 5 + 4 + 3 + 2 + 1 + \text{sum}(1-1)$$

$$= 5 + 4 + 3 + 2 + 1 + \text{sum}(0) = 5 + 4 + 3 + 2 + 1 + 0 = 15$$

```

1 int sum(int n) {
2     if (n == 0) {
3         return 0;
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```