

int Return type

return — Recur. Case
return — Base. Case.

Type-2

1). Find sum till n.

$N = 5!$

$1 + 2 + 3 + 4 + 5 = 15$; (15 should be returned.)

SUM(5)

①



SUM(4)

②



SUM(3)

③



SUM(2)

④



SUM(1)

Base Case Hit

SUM(5)

①

SUM(4)

②

SUM(3)

③

SUM(2)

④

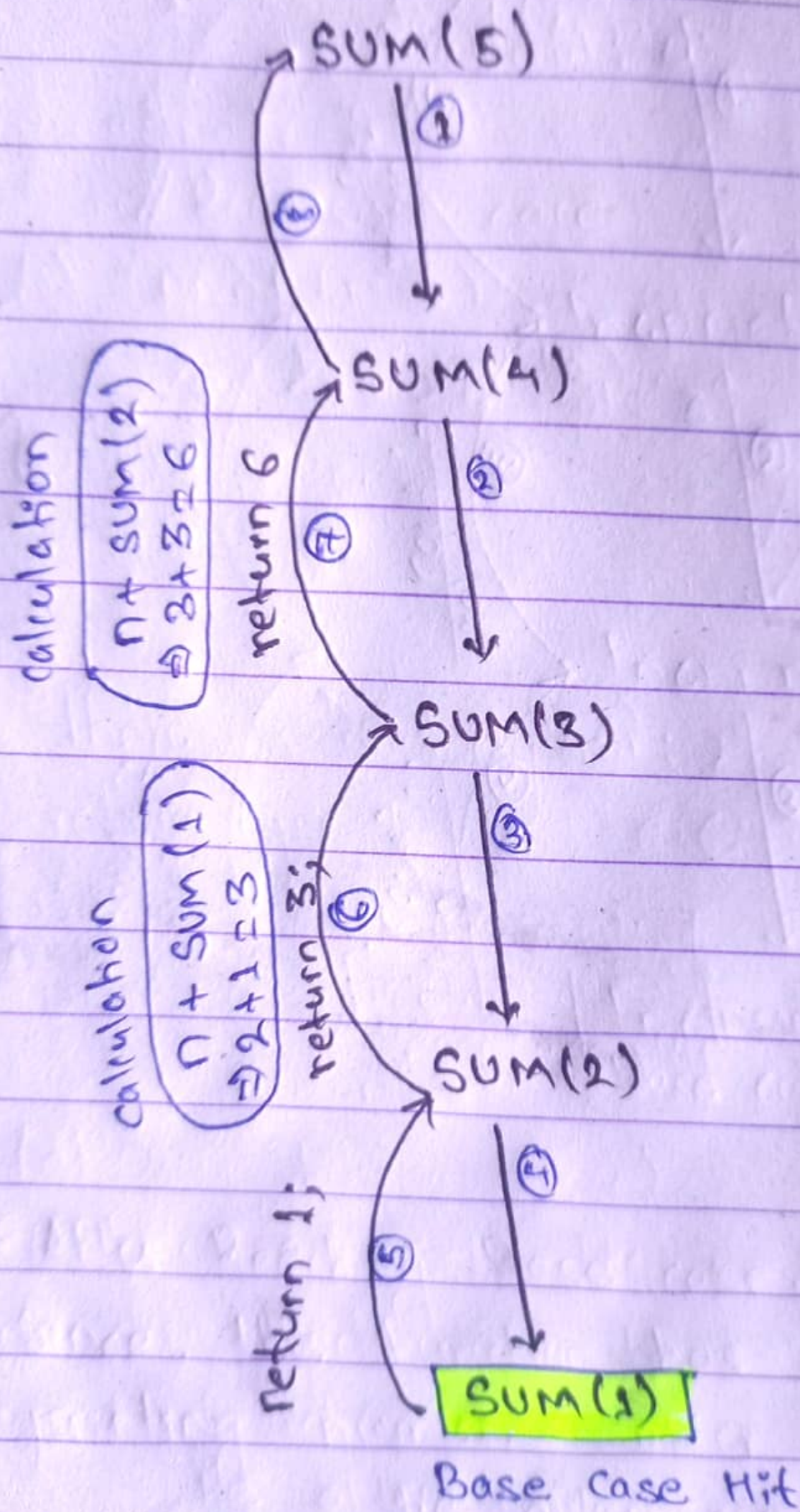
SUM(1)

return 1;

Base case Hit

return $n + \text{SUM}(n-1);$

return 1; // Base case Hit



$n + \text{SUM}(n)$

$$\Rightarrow 5 + 10 = 15$$

return 15 to
main function.

calculation

$$\begin{aligned} n + \text{SUM}(3) \\ \Rightarrow 5 + 6 = 10 \end{aligned}$$

return 9

SUM(5)

①

calculation

$$\begin{aligned} n + \text{SUM}(2) \\ \Rightarrow 3 + 3 = 6 \end{aligned}$$

return 6

SUM(4)

②

calculation

$$\begin{aligned} n + \text{SUM}(1) \\ \Rightarrow 2 + 1 = 3 \end{aligned}$$

return 3;

SUM(3)

③

SUM(2)

④

return 1;

SUM(1)

Base case Hit