Statie and global variable

recursion tree:

change(5)

/

change(4) + 5 ∘ $\underline{15}$ ⟶ printed.

↑ 5

/

change(3) + $\underline{4}$ ∘ 10

↑ 4

/

change(2) + $\underline{3}$ ∘ 6

↑ 3

/

change(1) + $\underline{2}$ =3

↑ 2

/

change(0) + $\underline{1}$ = 1

|

X

Heap

Static

ule
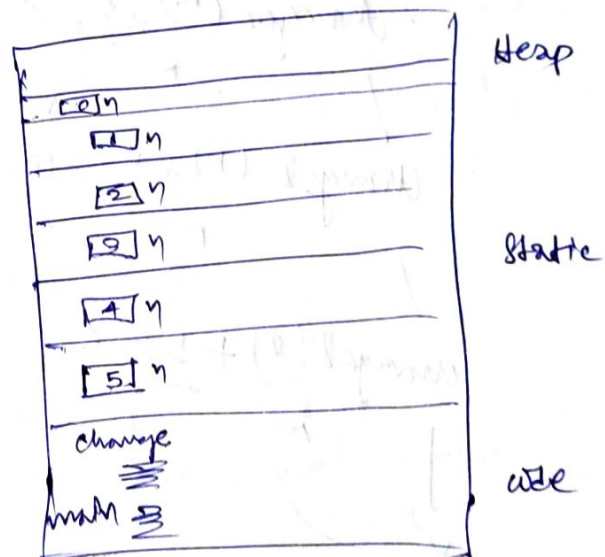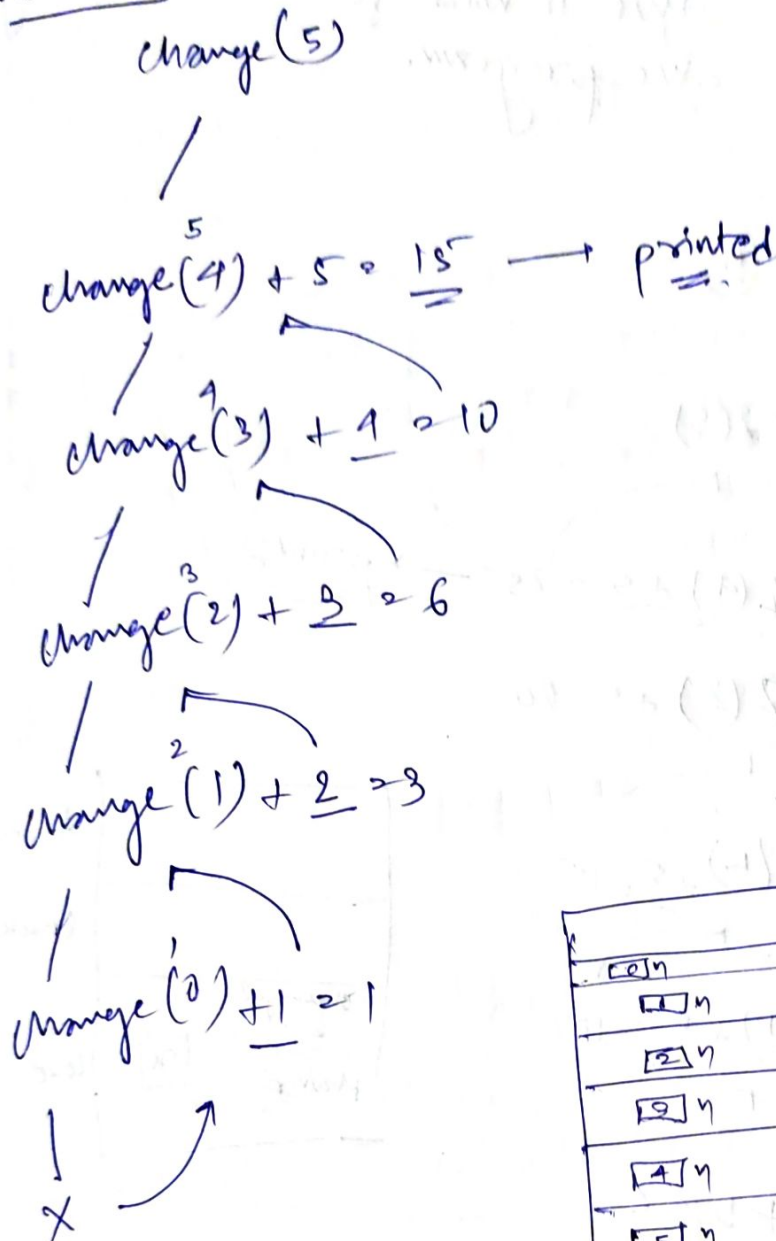
program:

```
int change (int n)
{     if (n≠0) {
          return  change (n-1) + n ; }
}
int main() {
     int n=5;
     cout << change (n);
     return 0;
```

Static variable — The space for the static variable is allocated only one time and this is used for the entirety of the program.

α

$\boxed{\phi} \ \cancel{1} \ \cancel{2} \ \cancel{3} \ \cancel{4} \ \boxed{5}$

change 2(5)

change 2(4) + 5 = 25 $\longrightarrow$ printed

change 2(3) + 5 = 20

change 2(2) + 5 = 15

change 2(1) + 5 = 10

change 2(0) + 5 = 5

↓

X

heap

stack

change2

main

$\boxed{\alpha}$

code