

- if statement will be executed for 0 to  $n-1$ , or  $n$  times.
- The return statement inside if will be executed once.
- The else block and the return statement inside it will be executed for  $(n-1)$  times each.

$$\therefore \text{Total step count: } n+1+2(n-1) = \boxed{3n-1}$$

**Note:** According to ChatGPT, the ~~else~~ <sup>statement</sup> is not an executable one.  
 $\therefore$  The extra  $(n-1)$  steps of execution of the else statement shouldn't count.

2) Redo Exercise 3, Section 1.3 (truth tables), so that step counts are introduced into the function. Express the total count as an eqn:

**Soln:** 1. void all\_comb (bool tval[], int begin, int n)

```

2. {
3.     count++; // for if statement
4.     if (begin == n) { count++; // for the for loop statement
5.         for (int i = 0; i < n; i++) {
6.             count++; // for the print statement
7.             printf("%c ", tval[i] ? 'T' : 'F');
8.         }
9.         printf("\n"); count++; // for printing next line
10.    }
11. else
12. {
13.     count = count + 4; // for the following 4 executable statements
14.     tval[begin] = true;
15.     all_comb(tval, begin+1, n);
16.     tval[begin] = false;
17.     all_comb(tval, begin+1, n);
18. }
19. }
```