

## **Segment 1:**

Answer:  $O(n^2)$

Constant operations:

- Assign n to user input
- Assign r to 20
- Assign dummy to 0

Operations:

- **First For Loop:**
- Assign  $i = 0$
- Compare  $i$  to  $n$
- Continue if  $i < n$
- Increment dummy by 1
- **Second For Loop:**
  - Assign  $j = 0$
  - Compare  $j$  to  $n$
  - Continue if  $j < n$
  - $R + \text{dummy}$
  - Increment  $j$  by 1
- Increment  $i$  by 1

First loop =  $5n$

Second loop =  $5n$

$5n * 5n = 25n^2$

Remove constant =  $O(n^2)$

## **Segment 2:**

Answer:  $O(n)$

Constant operations:

- Assign  $m$  to user input

Operations:

- **First For Loop:**
  - Assign  $j$  to 1
  - Compare  $j$  to  $m$
  - Continue if  $j \leq m$
  - Increment  $j$  by 1
- **First While Loop:**
  - Compare  $m$  to 0
  - Continue if  $m > 0$
  - Decrement  $m$  by 1

First loop =  $4n$

Second loop =  $3n$

$4n + 3n = 7n$

Remove constant and apply big O =  $O(n)$