Let $\text{len}(A) = n$. Suppose $n \geq 1$.

How many steps does this code take in the worstcase?

line 1: 2.

line 2: $1, 2, \cdots, n-1, n \to n$ steps (value of i)

($1, 2, \cdots, n-1$: true; n: false.)

line 3, 4, 8, 9: $n-1$ times, so $17n-17$ times. ($5+3+5+4=17$)

line 5: value of j: $j = i, i-1, \cdots, 1, 0$ $\Rightarrow 10i+3$ for each i.

(i, $i-1$, $\cdots$, 1: true; 0: false.)

If true take 10 steps. | If false take 3 steps.

line 6, 7: $12i$ steps for each i. ($4+8$)

$$\Rightarrow 2+5n+17n-17+\sum_{i=1}^{n-1}(10i+3+12i)$$

$$= 22n-15+\sum_{i=1}^{n-1}(22i+3)$$

$$= 22n-15+22\sum_{i=1}^{n-1} i + 3(n-1)$$

$$= 22n-15+22\frac{n(n-1)}{2}+3n-3$$

$$= 11n^2+14n-18 \text{ steps in total.}$$

for loop get $11n^2-1$

Both quadratic

$$\to 11n^2+14n-18 \leq 11n^2+14(n-1)$$

$$\leq 11n^2+14n$$

$$\leq 11n^2+14n^2 \quad \text{b/c } n \in \mathbb{N},\ n \geq 1.$$

$$\leq 25n^2.$$