Seja um vetor v de tamanho n.

```
1 int soma_maluca(int *v, int n){
2   int soma = 0;
3   for (int i = 0; i < n - 1; i++)
4     for (int j = i + 1; j < n; j++)
5       soma += (v[i] + v[j]);
6   return soma;
7 }
```

- Qual o tempo de execução desse algoritmo?

$$T(n) = c_2 + n + \sum_{i=0}^{n-1} n-(i+1) + n-(i+2)$$

$$\sum_{i=0}^{n-1} n - \sum_{i=0}^{n-1} i + \sum_{i=0}^{n-1} 1 \qquad \sum_{i=0}^{n-1} n - \sum_{i=0}^{n-1} i + \sum_{i=0}^{n-1} 2$$

$$n^2 - n - \frac{n(n-1)}{2} + n - 1 \qquad n^2 - n - \frac{n(n-1)}{2} + 2n - 2$$

$$\frac{2n^2 - 2n - n^2 - n + 2n - 2}{2} \qquad \frac{2n^2 - 2n - n^2 - n + 4n - 4}{2}$$

$$\frac{n^2 - n - 2}{2} + \frac{n^2 + n - 4}{2} \rightarrow \frac{2n^2 - 6}{2}$$

$$T(n) = c_2 + n + \frac{2n^2 - 6}{2} \Rightarrow \text{Desconsiderando } c_2$$

$$= n + \frac{2n^2 - 6}{2} \Rightarrow n + \frac{2(n^2 - 3)}{2} \Rightarrow n^2 + n - 3$$