

Flops needed

$$\begin{aligned} & 2 * n * n + 2 * (n - 1) * (n - 1) + \dots + 2 * 3 * 3 + 2 * 2 * 2 + 2 * 1 * 1 \\ & = 2 * (n^2 + (n - 1)^2 + \dots + 2^2 + 1^2) = 2 * n * (n + 1) * \frac{2n + 1}{6} = O\left(\frac{n^3}{3}\right) \end{aligned}$$