

# An incrementally built formula page

$$Q(n) = \sum_{i=1}^n i^2 = \frac{1}{3}n(n + \frac{1}{2})(n + 1)$$

# An incrementally built formula page

$$Q(n) = \sum_{i=1}^n i^2 = \frac{1}{3}n(n + \frac{1}{2})(n + 1)$$

$$\left| \frac{1}{3}n^3 + \frac{1}{2}n^2 + \frac{1}{6}n \right| \leq \left| \frac{1}{3}n^3 \right| + \left| \frac{1}{2}n^2 \right| + \left| \frac{1}{6}n \right|$$

# An incrementally built formula page

$$Q(n) = \sum_{i=1}^n i^2 = \frac{1}{3}n(n + \frac{1}{2})(n + 1)$$

$$\begin{aligned} \left| \frac{1}{3}n^3 + \frac{1}{2}n^2 + \frac{1}{6}n \right| &\leq \left| \frac{1}{3}n^3 \right| + \left| \frac{1}{2}n^2 \right| + \left| \frac{1}{6}n \right| \\ &\leq \frac{1}{3}|n^3| + \frac{1}{2}|n^3| + \frac{1}{6}|n^3| \\ &= |n^3| \end{aligned}$$