

Calculus I

Reference: Summation formulas related to limits of Riemann Sums

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2019

The following **power sums** will be useful in what follows:

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

$$② \sum_{i=1}^n i^2 = \frac{n(n+1)(2n+1)}{6}$$

$$③ \sum_{i=1}^n i^3 = \left[\frac{n(n+1)}{2} \right]^2$$