Sumatorias Importantes

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

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

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

$$\sum_{i=1}^{n} i^4 = \frac{n(n+1)(2n+1)(3n^2+3n-1)}{30}$$

$$\sum_{i=1}^{n} r = nr$$

$$\sum_{i=0}^{n} r^i = \frac{1-r^{n+1}}{1-r}$$

$$\sum_{i=1}^{n} r^i = \frac{r^{n+1}-r}{r-1}$$

$$\sum_{i=1}^{n} \frac{1}{r^i} = \frac{r^n-1}{r^{n+1}-a^n}$$

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

$$\sum_{i=0}^{n} i \cdot i! = (n+1)!-1$$