Source: [KBhMATH401SubIndex]

1 | Series Convergence

In $\sum_{k=0}^{\infty} a(r^k)$, where $|r| < 1$, $\sum_{k=0}^{\infty} a(r^k) = \frac{a}{1-r}$

In $\sum_{k=0}^{n} a(r^k)$, $\sum_{k=0}^{n} a(r^k) = \frac{a-ar^{n+1}}{1-r}$