SUME KOJE SE ČESTO POJAVLJUJU

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$$\sum_{n=0}^{\infty} x^n = \frac{1}{1-x} \qquad \sum_{n=m}^{\infty} x^n = \frac{x^m}{1-x} \qquad \sum_{n=0}^{k} x^n = \frac{1-x^{k+1}}{1-x}$$

$$\sum_{n=0}^{\infty} (x+1)x^n = \sum_{n=0}^{\infty} (x^{n+1})' = \left(\sum_{n=0}^{\infty} x^{n+1}\right)' = \left(x\sum_{n=0}^{\infty} x^n\right)' = \left(x \cdot \frac{1}{1-x}\right)' = \frac{1}{(1-x)^2}$$

$$\sum_{n=0}^{\infty} \frac{x^n}{n!} = e^x \quad \left(\text{ako je } -x \Rightarrow e^{-x}\right)$$

$$\sum_{n=1}^{\infty} \frac{x^n}{n} = -\ln(1-x) \quad \left(\text{ako je } -x \Rightarrow -\ln(1+x)\right)$$

$$\left.\begin{aligned} \sum_{k=0}^{\infty} \frac{(-1)^k}{(2k)!} x^{2k} &= \cos x \\ \sum_{k=0}^{\infty} \frac{(-1)^k}{(2k+1)!} x^{2k+1} &= \sin x \end{aligned}\right\} \text{Maclaurin}$$

$$\sum_{n=0}^{\infty} \binom{\alpha}{n} x^n = (1+x)^{\alpha}$$

$$\sum_{n=0}^{\infty} \frac{x^{2n}}{(2n)!} = \cosh(x)$$

$$\sum_{n=0}^{\infty} \frac{x^{2n+1}}{(2n+1)!} = \sinh(x)$$