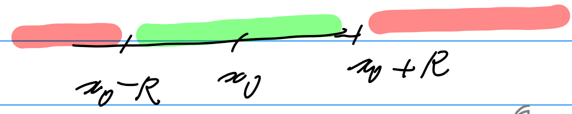
$$\sum_{n=1}^{\infty} \frac{(2n)!\,(x+1)^{n+1}}{7^n} = (x+1)\cdot\sum a_n (x-x_0)^n , \quad x_0 = -1$$

$$a_n = \frac{(2n)!}{7^n}$$

Poloměr konvergence mocninné řady:



$(2n)! = 1\cdot 2\cdot 3\cdot \ldots\ldots (2n-1)\cdot(2n)$

$$\frac{a_{n+1}}{a_n} = \frac{(2(n+1))!}{7^{n+1}}\cdot\frac{7^n}{(2n)!}$$

$$= \frac{(2n+2)!}{7^n\cdot 7}\cdot\frac{7^n}{(2n)!} = \frac{\cancel{(2n)!}\,(2n+1)(2n+2)}{\cancel{7^n}\cdot 7}\cdot\frac{\cancel{7^n}}{\cancel{(2n)!}} =$$

$$= \frac{(2n+1)(2n+2)}{7} \to +\infty = \frac{1}{R}, \quad n\to\infty$$

$R = 0$

oblast konvergence: $\underline{\{-1\}}$.