$$\sum_{n \geqslant 0} \frac{\overset{n}{(-1)}}{n} x^{2n+1}$$

$$a_n = \overbrace{\frac{(-1)}{n} x^{2n+1}} = \frac{\overline{x}^{2n+1}}{n}$$

$$\Rightarrow \frac{a_{n+1}}{a_n} = \frac{\overline{x}^{2n+3}}{n+1} \frac{n}{\overline{x}^{2n+1}} = \frac{n}{n+1} \overline{x}^2 \rightsquigarrow \overline{x}^2 < 1 \Leftrightarrow \overline{x} < 1$$

$$x = 1 \underset{\text{Leib}}{\Longrightarrow} \sum_{n \geqslant 0} \frac{\overset{n}{(-1)}}{n} \text{ conv}$$

$$x = -1 \Rightarrow \sum_{n \geqslant 0} \frac{\overset{n}{(-1)}}{n} (-1)^{2n+1} \underset{\text{Leib}}{=} -\sum_{n \geqslant 0} \frac{\overset{n}{(-1)}}{n} \text{ conv}$$

$$\sum_n \frac{2^n}{n!} x^n \colon \quad \mathbb{R}$$

$$\sum_n \frac{n!}{4^n} x^n \colon \quad 0$$

$$\sum_n \frac{x^n}{n 2^n} \colon \quad -2 \leqslant x < 2$$

$$\sum_n \frac{4^n}{n^2 \pi^n} x^n \colon \quad -\frac{\pi}{4} \leqslant x \leqslant \frac{\pi}{4}$$

$$\sum_n \frac{x^n}{n^2} \colon \quad -1 \leqslant x \leqslant 1$$

$$\sum_n \frac{n}{4^n} x^n \colon \quad -4 < x < 4$$

$$\sum_n \frac{2^n (n+1)}{n^n} x^n \colon \quad \mathbb{R}$$

$$\sum_n \frac{x^n}{n^3 3^n} \colon \quad -3 \leqslant x \leqslant 3$$

$$\sum_n \frac{2^n}{n^2+1}\,x^n\colon \quad -\frac{1}{2} \leqslant x \leqslant \frac{1}{2}$$

$$\sum_n \frac{x^n}{n10^{n-1}}\colon \quad -10 \leqslant x < 10$$

$$\sum_n \frac{n^2}{3^n\left(n^3+3\right)}\,x^n\colon \quad -3 \leqslant x < 3$$

$$\sum_n \frac{\sqrt{n}4^n}{n+1}\,x^n\colon \quad -\frac{1}{4} \leqslant x < \frac{1}{4}$$

$$\sum_n \frac{(-1)^n}{n^2+1}\,x^n\colon \quad -1 \leqslant x \leqslant 1$$

$$\sum_n \frac{(-3)^n}{n}\,x^n\colon \quad -\frac{1}{3} < x \leqslant \frac{1}{3}$$

$$\sum_n \left(\frac{3^n+1}{4^n}\right)^n x^n\colon \quad \mathbb{R}$$

$$\sum_n \frac{4^n+5^n+6^n}{n}\,x^n\colon \quad -\frac{1}{6} \leqslant x < \frac{1}{6}$$

$$\sum_n \frac{(n+1)^2}{5^n+6^n+7^n}\,x^n\colon \quad -7 < x < 7$$

$$\sum_n \frac{(-1)^n}{\sqrt{n}3^{n-1}}\,x^n\colon \quad -3 < x \leqslant 3$$

$$\sum_n \frac{n!}{2^n}\,x^n\colon \quad 0$$

$$\sum_n \frac{(n!)^2}{(2n)!}\,x^n\colon \quad -4 < x < 4$$

$$\sum_n \frac{3^{2n}\sqrt{n}}{2^n n^{1/3}}\,x^n\colon \quad -\frac{2}{9} < x < \frac{2}{9}$$

$$\sum_n \frac{n!}{(2n)!}\,x^n\colon \quad \mathbb{R}$$

$$\sum_n \frac{x^n}{n^2 10^{2n}}: \quad -100 \leqslant x \leqslant 100$$

$$\sum_n \frac{5\sqrt{n}}{n^4 2^n}\, x^n: \quad -2 \leqslant x \leqslant 2$$

$$\sum_n \frac{2^n}{3n^{1/4}}\, x^n: \quad -\frac{1}{2} \leqslant x < \frac{1}{2}$$

$$\sum_n \frac{n-1}{n^3 2^n}\, x^n: \quad -2 \leqslant x \leqslant 2$$

$$\sum_n \frac{7^{\sqrt{n}}}{n^3}\, x^n: \quad -1 < x < 1$$

$$\sum_n \frac{n3^n}{(n+1)^2}\,(x-1)^n: \quad \frac{2}{3} \leqslant x < \frac{4}{3}$$

$$\sum_n \frac{(n+1)^2}{n3^n}\,(x-1)^n: \quad -2 < x < 4$$

$$\sum_n \frac{n3^n}{\sqrt{n+1}}\,(x-2)^n: \quad \frac{5}{3} < x < \frac{7}{3}$$

$$\sum_n \frac{(x-1)^n}{n2^n}: \quad -1 \leqslant x < 3$$

$$\sum_n \frac{n}{3^{n+1}}\,(x-2)^n: \quad -1 < x < 5$$

$$\sum_n \frac{(x+3)^n}{n^2}: \quad -4 \leqslant x \leqslant -2$$

$$\sum_n \frac{(-1)^n}{(2n+1)^2}\,(x-1)^n: \quad 0 \leqslant x \leqslant 2$$

$$\sum_n \frac{(-2)^{n+1}}{9\big(n^5+3\big)n}\,(x+3)^n: \quad -\frac{13}{2} \leqslant x \leqslant \frac{1}{2}$$

$$\sum_n \frac{n^2}{3^n\left(n^3+2\right)}\,(x+2)^n: \quad -5 \leqslant x < 1$$

$$\sum_n \frac{(-3)^n}{(2n+1)^2}(x-1)^n: \quad \frac{2}{3} \leqslant x \leqslant \frac{4}{3}$$

$$\sum_n \frac{2^n}{n^2+2}(x+3)^n: \quad -\frac{7}{2} \leqslant x \leqslant -\frac{5}{2}$$

$$\sum_n \frac{(-1)^n}{(2n+1)^2}(x-1)^n: \quad 0 \leqslant x \leqslant 2$$

$$\sum_n 2^{n^2}\left(\frac{n+1}{2n+4}\right)^n (x+2)^n: \quad -2$$

$$\sum_n \frac{n^2}{n^3+3^n}(x-3)^n: \quad 0 < x < 6$$

$$\sum_n \frac{n+1}{9n^2 n}x^{2n}: \quad -2 < x < 2$$

$$\sum_n \frac{n9^{n+1}}{n+1}x^{2n}: \quad -\frac{1}{3} < x < \frac{1}{3}$$

$$\sum_n \frac{n4^n}{\sqrt{n+1}}x^{2n}: \quad -\frac{1}{2} < x < \frac{1}{2}$$

$$\sum_n \left(\frac{1}{5}^n + \frac{1}{6}^n\right)x^{2n}: \quad -\sqrt{5} < x < \sqrt{5}$$

$$\sum_n \frac{n}{\left(n^2+1\right)16^{n+1}}x^{2n}: \quad -4 < x < 4$$

$$\sum_n \frac{(-4)^n}{n+1}x^{2n}: \quad -\frac{1}{2} \leqslant x \leqslant \frac{1}{2}$$

$$\sum_n \frac{n^2}{16^n}x^{2n}: \quad -4 < x < 4$$

$$\sum_n \frac{n^2 9^n}{x^{2n}}: \quad -3 \leqslant x \leqslant 3$$

$$\sum_n^{\mathbb{N}} \frac{z^n}{n^n}$$

$$\sum_{2 \leqslant n} \frac{1}{n \not{\prime} n} x^n$$

$$\sum_{n}^{\mathbb{N}} \frac{(2n)!}{(n!)^2} (x-1)^n$$

$$\sum_{n}^{\mathbb{N}} 1 \ 3 \ 5 \quad (2n-1) \ x^n$$

$$\sum_{n}^{\mathbb{N}} {}^{\pi n/2}{}_{\mathfrak{S}} \ x^n$$

$$\sum_{n}^{\mathbb{N}} \underbrace{1+2+\quad +n} x^{2n-1}$$

$$\sum_{n}^{\mathbb{N}} \frac{1 \ 5 \ 9 \quad (4n-3)}{2 \ 4 \ 6 \quad 2n} x^n$$