

$$2814. \sum_{n=1}^{\infty} \frac{(n!)^2}{(2n)!} x^n.$$

$$2815. \sum_{n=1}^{\infty} \alpha^{n^2} \cdot x^n \quad (0 < \alpha < 1).$$

$$2816. \sum_{n=1}^{\infty} \left(1 + \frac{1}{n}\right)^{n^2} x^n.$$

$$2817. \sum_{n=1}^{\infty} \frac{n!}{a^{n^2}} x^n \quad (a > 1).$$

$$2818. \sum_{n=1}^{\infty} \left[\frac{1 \cdot 3 \cdot 5 \dots (2n-1)}{2 \cdot 4 \cdot 6 \dots (2n)} \right]^p \left(\frac{x-1}{2} \right)^n.$$

$$2819. \sum_{n=1}^{\infty} (-1)^n \left[\frac{2^n (n!)^2}{(2n+1)!} \right]^p x^n.$$

$$2820. \sum_{n=1}^{\infty} \frac{m(m-1) \dots (m-n+1)}{n!} x^n.$$

$$2821. \sum_{n=1}^{\infty} \left(\frac{a^n}{n} + \frac{b^n}{n^2} \right) x^n \quad (a > 0, b \geq 0).$$

$$2822. \sum_{n=1}^{\infty} \frac{x^n}{a^n + b^n} \quad (a > 0, b > 0).$$

$$2823. \sum_{n=1}^{\infty} \frac{x^n}{a^{\sqrt{n}}} \quad (a > 0).$$

$$2824. \sum_{n=1}^{\infty} \frac{3^{-\sqrt{n}} x^n}{\sqrt{n^2 + 1}}.$$

$$2825. \sum_{n=1}^{\infty} \frac{(2n)!!}{(2n+1)!!} x^n.$$