For each power series, find the radius of convergence and interval of convergence.

1. $\sum_{n=1}^{\infty} \frac{x^n}{\sqrt{n}}$
2. $\sum_{n=0}^{\infty} (-1)^n \frac{n^2 x^n}{2^n}$
3. $\sum_{n=0}^{\infty} \frac{x^n}{n!}$
4. $\sum_{n=1}^{\infty} \sqrt{n} x^n$
5. $\sum_{n=1}^{\infty} n!(2x-1)^n$
6. $\sum_{n=1}^{\infty} \frac{n(x-4)^n}{n^3+1}$
7. $\sum_{n=1}^{\infty} \frac{10^n x^n}{n^3}$
8. $\sum_{n=1}^{\infty} \frac{n^2 x^n}{2 \cdot 4 \cdot 6 \cdots (2n)}$