1. Find the radius of convergence of $\sum\_{}^{}(a\_{n}x^{n})$, given $a\_{n}=1$when $n$ is the square of a natural number and $a\_{n}$ otherwise. If $a\_{n}=1$ when $n=m!$ for $n\in N$ and $a\_{n}=0$ otherwise, find the radius of convergence of $\sum\_{}^{}(a\_{n}x^{n})$.
2. Determine the radius of convergence of $\sum\_{}^{}(a\_{n}x^{n})$, if $0<ρ\leq \left|a\_{n}\right|\leq q$ for all $n\in N$.