Exercises

E19.4 [1NC]Prerequisites:[1KQ].

Show that $f(x) = \frac{1}{1+x^2}$ is analytic on all $\mathbb{R}$, but the radius of convergence of the Taylor seried centered in x_0 is $\sqrt{1 + x_0^2}$.

Solution 1. [1ND]

Study similarly $f(x) = \sqrt{x^2 + 1}$ or $f(x) = e^{1/(x^2+1)}$.