Quiz **Name**

1. The Taylor series of the function $f(x) = (x+1)^3 + e^x$ centered at zero is

$$\sum_{k=0}^{\infty} a_k x^k \; =$$

2. Determine the radius of convergence of this series.

3. Show that the Taylor series of the function $f(x) = (x+2)^3 + e^x$ converges to the function for all x. Do this by verifying that $\lim_{n\to\infty} R_n(x) = 0$ for any x.