

HW 4-19

① Find the radius of convergence of the series

$$\sum_{k=1}^{\infty} \frac{x^k}{k^k} \quad \text{and} \quad \sum_{n=0}^{\infty} \frac{x^n}{2^n + 3^n} .$$

② With $E(x) = \sum_{n=0}^{\infty} \frac{x^n}{n!}$, show $E\left(\frac{x}{2}\right) = \sqrt{E(x)}$.

③ Is there a power series $\sum_{n=0}^{\infty} a_n x^n$ whose sum is $|x|$ on $(-1, 1)$?