

## Quiz 2 Solution

$$1. \quad a_n = \frac{(n!)^n}{(n^n)^2} \quad \sqrt[n]{a_n} = \frac{n!}{n^2} \rightarrow \infty$$

$\Rightarrow$  diverge

$$2. \quad a_n = \frac{\ln(n+1)}{n+1} > \frac{1}{n+1} \quad \text{when } n \geq 2$$

$$\sum_{n=1}^{+\infty} \frac{1}{n+1} \text{ diverge} \Rightarrow \sum_{n=1}^{+\infty} \frac{\ln(n+1)}{n+1} \text{ diverge}$$