Problem 1. Decide whether \( \int_1^\infty \frac{e^x}{x^2} \, dx \) is convergent or divergent. (Hint: You may want to try applying the Integral Test in some way).

Problem 2. Determine whether \( \sum_{n=2}^{\infty} \frac{1}{(\ln n)^{\ln n}} \) converges or diverges.