Quiz 10

1. (5 points). Compute $\lim_{x \to \infty} xe^{-x}$.

2. (5 points). Compute $\lim_{x \to \infty} \frac{x}{\sqrt{x^2+1}}$.

3. (5 points). Show that $\lim_{x \to \infty} \frac{\ln x}{x^n} = 0$ for all $n > 0$.

Extra credit. (2 points). Compute $\lim_{x \to \infty} (1 + \frac{1}{x})^x$.