Assignment 03

1. Given Taylor series of $e^x = \sum_{k=0}^{\infty} \frac{x^k}{k!}$. Show that $\frac{d}{dx} e^x = e^x$.

2. Prove that for even integer $k \geq 2$, $\mathbf{E}[X^k] \geq (\mathbf{E}[X])^k$.