

Chapter 12 TAKE HOME EXAM

20 points/problem

1. FIND e^{e^x} as a power series ^{in x} to terms of the 6th degree.
2. SHOW $e^{x+y} = e^x e^y$ using only $e^x = \sum_{n=0}^{\infty} \frac{x^n}{n!}$
3. SHOW Arctan x is equal to its Maclaurin series everywhere the series converges (P433, p31)
4. SHOW e is irrational (Pg 434, pr 34)
5. FOR $x \geq e$ show $e^x \leq x^x \leq \leftarrow x^* e^{x^2}$
using power series