

**Instructor:** Michael Lerner, CST 213 221, Phone: 776-983-1784

Name: \_\_\_\_\_

**Assignment 1, Due Friday Jan 19, 11:00AM.**

In class, we reviewed series and were introduced to power series.

1. (5 points)  $e^x$ 
  - (a) Find the series expansion
  - (b) Find the region of convergence
2. (5 points)  $\ln(1 + x)$ 
  - (a) Find the series expansion
  - (b) Find the region of convergence
3. (5 points)  $(1 + x)^p$ 
  - (a) Find the series expansion
  - (b) Find the region of convergence
4. What is the small angle approximation? Knowing what you know about the topics we've covered in this class, how could you justify the small angle approximation?