## Quiz 9 for Calc4 on Apr. 30, 2014

**Name:**_____**RUID:**_____

**Email:**_____

(1) (10 pt) Fill in the blanks above and especially, give me a valid email address!

(2) (5 pt) Determine the region of $x$ such that the following series is convergent:

$$\sum_{n=0}^{\infty} \frac{n^4}{4^n} x^n$$

(3) (5 pt) Write the following expression into a single power series:

$$\sum_{n=2}^{\infty} n(n-1)a_n x^{n-2} + x \sum_{n=1}^{\infty} na_n x^{n-1} - \sum_{n=0}^{\infty} a_n x^n$$