

**Quiz 7**

Math 1220-7

November 9, 2012

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

Directions: Show all work for full credit. Clearly indicate all answers. Simplify all mathematical expressions completely. No calculators are allowed on this quiz. Each part of each question is worth 15 points.

1. Determine whether each of the following series converges or diverges. Be sure to justify each answer with an appropriate test.

(a)  $\sum_{n=1}^{\infty} ke^{-3k^2}$

(b)  $\sum_{n=1}^{\infty} \frac{8^n}{n!}$

$$(c) \sum_{n=1}^{\infty} \frac{n}{n+200}$$

2. Determine whether the following series is absolutely convergent, conditionally convergent, or divergent:

$$\sum_{n=1}^{\infty} (-1)^{n+1} \frac{n}{n^2+1}$$