

236 Quiz 6

March 22, 2011

Name _____

By printing my name I pledge to uphold the Honor Code.

Work on your own with only your notebook.

1. Explain what you would have to show to prove that the series

$$\sum_{k=1}^{\infty} \frac{k}{3^k}$$

converges, using each of the three tests listed below. You do NOT actually have to perform the tests, just describe what needs to be done.

- a) Integral Test

▷ would have to solve the improper integral:

▷ using the integration technique:

▷ and then make the conclusion that:

- b) Comparison Test

▷ could compare to the series:

▷ because of this inequality:

▷ and then make the conclusion that:

- c) Limit Comparison Test

▷ could compare to the series:

▷ and would have to calculate this limit:

▷ and then make the conclusion that: