Name: _____ Sort #: _____

Worksheet 17

Ratio, Root, and Absolute Convergence Tests MATH 2205, Fall 2018

Determine if the following series converge or diverge.

1. $\displaystyle\sum_{k=1}^{\infty} k \left(\frac{2}{3}\right)^k$

2. $\displaystyle\sum_{k=0}^{\infty} \frac{(k!)^2}{(2k)!}$

3. $\displaystyle\sum_{n=1}^{\infty} \frac{(-2)^n}{n^n}$

4. Determine whether the series $\displaystyle\sum_{n=2}^{\infty} \frac{(-1)^n}{\ln(n)}$ is absolutely convergent, conditionally convergent, or diverges.