

# Quiz 7

## Math 253

Name:

Directions: Determine whether the series is absolutely convergent, conditionally convergent, or divergent. Clearly show your work and say what techniques and reasoning you used. If it is convergent write as much information as you can about the limit.

1. [3]  $\sum_{n=2}^{\infty} \frac{1}{n^2 - n}$

2. [3]  $\sum_{n=1}^{\infty} \frac{n!}{e^{n^2}}$

$$3. [3] \sum_{n=1}^{\infty} \frac{(-1)^n 3n}{4n-1}$$

$$4. [3] \sum_{n=1}^{\infty} \frac{(-1)^n}{(\arctan n)^n}$$