

## MAC2312: Calculus 2 - Section 3

### Quiz 16: 11.4 The Comparison Tests

July 23, 2015

1. Determine whether the following series is convergent or divergent.

$$\sum_{n=2}^{\infty} \frac{n^3}{n^4 - 1}$$

A. convergent

**B. divergent**

$$\sum_{n=2}^{\infty} \frac{n^3}{n^4 - 1} > \sum_{n=2}^{\infty} \frac{n^3}{n^4} = \sum_{n=2}^{\infty} \frac{1}{n}$$

and  $\sum_{n=1}^{\infty} \frac{1}{n}$  is divergent. Thus, by The Comparison Theorem,  $\sum_{n=2}^{\infty} \frac{n^3}{n^4 - 1}$  is divergent.