

# MATH 2300: Honors Calc 2

Oct 31, 2014

## Quiz 5

I have neither given nor received unauthorized assistance on this exam.

Name (print): \_\_\_\_\_

Signature: \_\_\_\_\_

**DO NOT WRITE IN THIS BOX!**

<b>Problem</b>	<b>Points</b>	<b>Score</b>
<b>1</b>	25 pts	
<b>2</b>	25 pts	
<b>3</b>	25 pts	
<b>4</b>	25 pts	
<b>TOTAL</b>	100 pts	

1. Consider the series  $\sum_{k=0}^{\infty} a_k$ . The  $n$ -th partial sum is  $s_n = \frac{nx^2}{n+2}$ .

(a) Find the sum of the series.

(b) Find  $a_3$ .

2. Find the interval of convergence of the series  $\sum_{n=1}^{\infty} \frac{(-1)^n (x-5)^n}{2^n n^2}$ .

Determine if the series converges conditionally, absolutely, or diverges. If possible, find the sum.

3. 
$$\sum_{n=2}^{\infty} \frac{3}{\ln(n^n)}$$

4. 
$$\sum_{n=3}^{\infty} \frac{\sin(\pi n)}{\sqrt{n}}$$