

MATH 162 EXAM 4, Spring 2007

No work, no credit!		Name:	Score	
1.	Determine whether the sequence is convergent. If it converges, find the limit. a) $a_n = n^3 e^{-n}$.	b) $\{\tan^{-1} 6n\}$.	1	
			2	
			3	
			4	
			5	
			6	
Ans: _____.		Ans: _____.		
2.	a) Sum the series $\sum_{n=1}^{\infty} \frac{3^n + 4^n}{7^n}$.	b) Write as a fraction: 6.254545454...	7	
			8	
			9	
			10	
			Tot	
Ans: _____.		Ans: _____.		
3.	Test for absolute convergence, conditional convergence or divergence: $s = 1 - \frac{1 \cdot 3}{3!} + \frac{1 \cdot 3 \cdot 5}{5!} + (-1)^{n-1} \frac{1 \cdot 3 \cdot 5 \dots (2n-1)}{(2n-1)!}$			
		CA CC D by _____ test.		
4.	Test for absolute convergence, conditional convergence or divergence: $\sum_{n=1}^{\infty} (-1)^n \frac{5n}{\sqrt{n^5 + 3}}$.			
		CA CC D by _____ test.		
5.	Test for absolute convergence, conditional convergence or divergence: $\sum_{n=1}^{\infty} (-1)^{n-1} \frac{n}{2n+1}$.			
		CA CC D by _____ test.		
6.	Find the value of the series correct to three decimal places: a) $\sum_{n=0}^{\infty} (-1)^n \frac{2^n}{n!}$			
		b) Estimate the error.		
Ans: _____.		Ans: _____.		

M162x4S07 Part II.	Name: _____	
7.	Find the interval of convergence of the series $\sum_{n=1}^{\infty} \frac{(2x-1)^n}{n 4^n}$. <div style="display: flex; justify-content: space-between;"> Radius of Conv: _____. Interval of Conv: _____. </div>	
8.	Use Maclaurin series of basic functions to find the Maclaurin series for: a) $f(x) = \sinh(x^2)$. Ans: _____	b) $f(x) = \frac{x}{4+x^2}$. Ans: _____
9.	Use power series to compute: a) $\int \frac{\sin x - x}{x^3} dx$. Ans: _____	b) $\lim_{x \rightarrow 0} \frac{\sin x - x}{x^3}$. Ans: _____
10.	Use the binomial series to find the first 4 non-zero terms of the Maclaurin series for $f(x) = \sqrt[3]{1+4x}$ a) Series (7 points) Ans: _____	
Extra Space		