

MATH 161 EXAM 2, Fall 2003

Simplify all answers. Show your work!		Name:	Score	
1.	Differentiate the function: a) $y = \sqrt[3]{x} + 2x^3$	b) $y = (2x + 5x^3)/x^3$	1	
			2	
			3	
			4	
			5	
			6	
			7	
2.	Differentiate the function: a) $V(r) = (4/3)\pi r^3$	b) $y = x^2 \tan x$	8	
			9	
			10	
			Tot	
3.	Differentiate the function: $y = (x^2 + 1)e^x$.	$y = \frac{x^2 + 1}{x^2 - 1}$.		
4.	The position of a particle is given by $s(t) = t^3 - 4t^2 + 8$. Find: a) The velocity at $t = 1$.	b) The acceleration at $t = 1$.		
5.	Find the following limits: a) $\lim_{x \rightarrow 0} \frac{3 \sin 2x}{5x}$.	b) $\lim_{t \rightarrow 0} \frac{\sin^2 4t}{t^2}$.		
6.	Differentiate the function: a) $y = \sin^2(x^3)$.	b) $y = e^{-2x} \sin(3x)$.		

