Quiz #1 101 Math 011

Name:	I.D.		

1. Find the limit $\lim_{x\to 3}\dfrac{x}{x-3}$

2. 2. Find N when $\lim_{x\to\infty}\dfrac{x}{x+1}=1$ and $\varepsilon = 0.001$

Quiz #2 101 Math 011

Name:	I.D.		

3. Find by definition the derivative of the function $f(x)=x^4$

2. Find $f(x)$ and a if $f'(a)=\lim_{h\to 0}\dfrac{\cos(\pi+h)+1}{h}$

3. Find the coordinate of all points on the graph of $y=1-x^2$ at which the tangent line passes through the point (2,0)

4. During the first 40 s of a rocket flight, the rocket is propelled stright up so that in *t* seconds it reaches a hight of $s=5t^3$ ft.

I. How high does the rocket travel in 40s?
II. What is the averge velocity of the rocket during the first 40s?
III. What is the averge velocity of the rocket during the first 135 ft of its flight?
IV. What is the instantaneous velocity of the rocket at the end of 40s?

Quiz #3 101 Math 011

Name:	I.D.		

4. (Q15/3.6)Find the local linear approximation of $f(x)=\sqrt{x+1}$ at $x_\circ = 0$ and use it to approximate $\sqrt{1.1}$.

2. find *dy/dx* if $y=\left(\dfrac{1+x\csc x^2}{1-\sec 2x\cot x}\right)^2$

Quiz #4 101 Math 011

Name:	I.D.		

5. (Q28/4.1)Find the formula for $f(x)^{-1}$ and state the domian of $f(x)^{-1}$ where $f(x)=3x^2+5x-2,\ x\ge 0$.

2. Prove that $y''=\cos y(\sin y+1)$ if $x=\dfrac{\cot y}{1+\csc y}$

Quiz #5 101 Math 011

Name:	I.D.		

Q27/5.3 Consider the function $f(x)=2x+3x^{\frac{2}{3}}$ Follow the steps to sketch the Graph of the function.

1) Find symmetry if any

2) Find y-int. then x-int. then check if the graph above the x-axis or below.

f _____

3) Find relative extreme then check if the graph increasing or decreasing

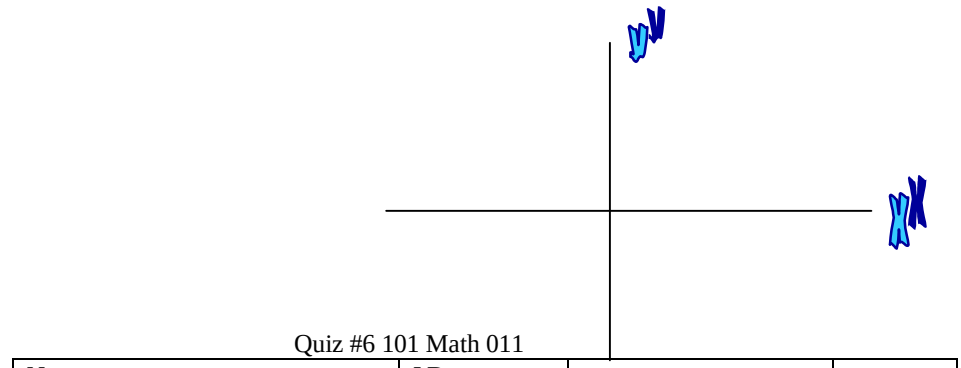
f' _____

4) Find asymptotes if any

5) Find inflection points if any then check if the graph concave up or down

f'' _____

6) Check the behavior of the graph as $x \to \infty$ and $x \to -\infty$



Quiz #6 101 Math 011

Name:	I.D.		

Q32/6.1 Find absolute min. and max. for the function $f(x) = \dfrac{\ln x}{x}$ in the interval $[1, 2e]$

Q34/6.2 A cone is made from a circular sheet of radius R by cutting out a sector and gluing the cut edges of the remaining piece together. What is the maximum volume attainable for the cone.

Quiz #7 101 Math 013

Name:	I.D.		

1. Find the absolute extrema for the function $f(x) = 2x^3 - 3x^2 - 12x + 1$ in $[-2,3]$

2. Let $f(x) = |2 - x|$ show that there is no c such that $\frac{f(3) - f(1)}{3 - 1} = f'(c)$,
explain why this does not contradict the Mean Value Th.

3. A closed rectangular box with a square base is to have a volume 20,000 cm^3. The material for the bottom of the box will cost 8 S. R. per cm^2, and the material for the sides and the top of the box will cost 2 S. R. per cm^2. Find the dimensions that will minimize the cost of the material.

4. A rock thrown downward with an unknown initial velocity from a height of 1000 ft reaches the ground in 4s, find the velocity of the rock when it hits the ground.