Math 1A (7:30am – 8:20am)
Quiz 1
Fri Sep 26, 2008

SCORE: ___ / 20 POINTS

What day of the month is your birthday ? ___ ___
What are the last 2 digits of your address ? ___ ___
What are the last 2 digits of your zip code ? ___ ___
What are the last 2 digits of your social security number ? ___ ___
[IF YOU DO NOT HAVE A SOCIAL SECURITY NUMBER, USE YOUR STUDENT ID NUMBER]

Estimate the slope of $f(x) = \sqrt{x}$ at $x = 2$ to two decimal places by using the method of secant lines discussed in class.
Show 6 points you used, and the corresponding slopes. You must use 3 points on each side of $x = 2$. **SCORE: ___ / 4 POINTS**

POINT	SLOPE OF SECANT LINE	POINT	SLOPE OF SECANT LINE
$(a, \sqrt{a})$	$\frac{\sqrt{a}-\sqrt{2}}{a-2}$ ← WHATEVER X-COORDINATE YOU USED (CALL IT a), YOUR SLOPE SHOULD EQUAL $\frac{\sqrt{a}-\sqrt{2}}{a-2}$	(,)	
(,)		(,)	
(,)		(,)	

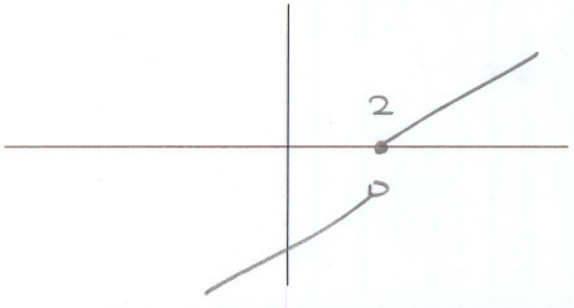
ESTIMATED SLOPE OF $f(x) = \sqrt{x}$ AT $x = 2$: 0.35 ← (1 POINT) (½ POINT EACH)

Estimate the length of the curve $f(x) = \frac{1}{x}$ from $x = 1$ to $x = 9$ to two decimal places, using 4 line segments, at equally spaced x-values.
Write down the numerical expression you needed to enter into your calculator. **SCORE: ___ / 3 POINTS**

(2 POINTS) →
NUMERICAL EXPRESSION: $\sqrt{(3-1)^2+(\frac{1}{3}-\frac{1}{1})^2}+\sqrt{(5-3)^2+(\frac{1}{5}-\frac{1}{3})^2}+\sqrt{(7-5)^2+(\frac{1}{7}-\frac{1}{5})^2}+\sqrt{(9-7)^2+(\frac{1}{9}-\frac{1}{7})^2}$

ESTIMATED LENGTH OF CURVE: 8.11 ← (1 POINT)

Sketch a function $f(x)$ such that $f(2)$ exists but $\lim_{x\to 2} f(x)$ does not exist. **SCORE: ___ / 2 POINTS**



(INFINITELY MANY POSSIBILITIES)

Estimate the following limits (to 2 decimal places), if they exist, using either numerical or graphical evidence.
If a limit does not exist, write DNE. **SCORE: ___ / 11 POINTS**

$\lim_{x\to 1} \frac{\sqrt{50-x}-7}{\sqrt{x+3}-2} =$ −0.29 (3 POINTS)

$\lim_{x\to 3} \frac{\ln(x^2-8)}{x-3} =$ 6.00 (3 POINTS)

$\lim_{x\to 0} \tan^{-1}\left(\frac{1}{x}\right) =$ DNE (2 POINTS)

$\lim_{x\to 0} \tan^{-1}\left(\frac{1}{x^2}\right) =$ 1.57 (3 POINTS)