Math 1A (9:30am – 10:20am)
Quiz 1
Fri Jan 9, 2009

SCORE: ___ / 10 POINTS

What month is your birthday ? ___ ___
What are the first 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]

SUBTRACT ANY POINTS LISTED HERE

Estimate the slope of $f(x) = \ln x$ at $x = 3$ by using the method of secant lines discussed in class. **SCORE: ___ / 4 POINTS**

Show 6 points you used, and the corresponding slopes. You must use 3 points on each side of $x = 3$. Round your slopes to 4 decimal places.

POINT	SLOPE OF SECANT LINE	POINT	SLOPE OF SECANT LINE
$(a, \ln a)$	$\frac{\ln a - \ln 3}{a - 3}$	(,)	
(,)		(,)	
(,)		(,)	

USE YOUR CALCULATOR TO CHECK THAT YOUR SLOPE EQUALS THIS EXPRESSION FOR EACH POINT YOU USED

ESTIMATED SLOPE OF $f(x) = \ln x$ AT $x = 3$: 0.3333

1 POINT

$\frac{1}{2}$ POINT FOR EACH CORRECT SLOPE

You want to estimate the length of the curve $f(x) = x^2 - 4x$ from $x = 0$ to $x = 12$ to four decimal places using 4 line segments (at equally spaced x-values). **SCORE: ___ / 4 POINTS**

[a] Write down the numerical expression you would need to enter into your calculator to find that length.

$\sqrt{(3-0)^2+(-3-0)^2} + \sqrt{(6-3)^2+(12--3)^2} + \sqrt{(9-6)^2+(45-12)^2} + \sqrt{(12-9)^2+(96-45)^2}$

OR

$\sqrt{3^2+(-3)^2} + \sqrt{3^2+15^2} + \sqrt{3^2+33^2} + \sqrt{3^2+51^2}$

$\frac{3}{4}$ POINT EACH

[b] Use your calculator to find the length using the method in [a]. Round your answer to 4 decimal places.

103.7639

1 POINT

[MULTIPLE CHOICE] Estimate the length of the curve $f(x) = x^3$ from $x = -1$ to $x = 5$ to four decimal places using 3 line segments (at equally spaced x-values). **SCORE: ___ / 2 POINTS**

[a] 126.5704 [b] 126.8031 [c] 126.9256 [d] 127.0337

LETTER OF CORRECT ANSWER: [C]