MAT 123: Introduction to Calculus

Exam 1, Fall 2007

Monday, October 8, 8:30pm - 9:30pm

Directions: Do not turn this page over until you are directed to do so. Please fill in your name, Stony Brook ID number, and your recitation number on the lines below. Please then circle the recitation/evening lecture you belong to in the chart below. There are a total of 4 pages to this exam, not including the cover sheet. Be sure to have all of them. There are four questions on this exam. Point values for each question are shown in brackets to the right of the question number. There are 100 possible points one can earn on this exam. You may not leave the exam room until 9:00pm at the earliest. You may not use a calculator or any other electronical device for this exam. You may not consult any outside resources, including fellow test-takers, notes, and textbooks. You will also not receive any information from the proctors regarding the wording of any of the exam questions.

Name:	ID#:	Rec#:

R01	Michael	Μ	2:20p	R02	Claudio	W	11:45a	R03	Deanna	Tu	2:20p
R04	James	Tu	11:20a	R05	Michael	Μ	11:45a	R06	Michael	\mathbf{F}	8:30a
R07	Deanna	М	2:20p	R08	Paul	Μ	12:50p	R10	Suren	Tu	3:50p
R11	Jason	М	11:45a	R12	Suren	Tu	5:20p	R13	Dustin	W	2:20p
R14	William	W	6:50p	R15	Jason	Tu	2:20p	R16	Sarah	Th	2:20p
R17	Claudio	W	10:40a	R20	Sarah	F	12:50p	R21	Danielle	W	10:40a
R22	Frank	Tu	8:20a	R23	Katherine	Μ	12:50p	R24	Danielle	W	11:45a
R25	Daniel	М	2:20p	R26	Deb	Th	12:50p	R27	Raquel	Tu	11:20a
R30	Adam	Th	$3:50\mathrm{p}$	R31	Adam	Th	6:50p	R33	William	Th	11:20a
R34	Krystle	Tu	12:50p	R35	Krystle	Μ	10:40a	ELC90	Peter	MW	6:50p
ELC91	Nick	TuTh	6:50p								

QUESTION	1a	1b	1c	1d	1e	1f	1g	1h	1i	2	3	4	Total
Possible Pts	8	8	8	8	8	8	8	8	8	8	10	10	100
Pts Awarded													

(a) _____

(b) _____

(c) _____

1. [72 points total, 8 points for each part] A correct final answer here will receive full credit provided that the answer is *completely* correct (i.e., with no sign error or any other error) even if no work is shown. Any error will result in 0 points in each part unless coherent, relevant work and/or explanation is shown. Find the *exact* value of each of the following. Do *not* approximate irrational numbers. Place your final answer in the answer line to the right of the question. This is the only final answer that will be graded.

(a) $\sec 2\pi$

(b) $\operatorname{Arcsin}(-1)$

(c)
$$\tan\left(-\frac{7\pi}{4}\right)$$

(d)
$$12 \cot\left(\frac{\pi}{2}\right) - 7\pi$$

(d)	

Question 1 continued. Directions are on the previous page.

(e)
$$\sin^2\left(-\frac{2\pi}{3}\right) + \cos^2\left(-\frac{2\pi}{3}\right)$$

(f) $\cot\left(\operatorname{Arccos}\left(-\frac{1}{3}\right)\right)$

(e) _____

(g) $\operatorname{Arccos}(\tan \pi)$

(h) tan(390°)

(i) $\csc\left(\frac{5\pi}{3}\right)$

(f) _____

(g) _____

(h) _____

(i) _____

2. [8 points] Graph one cycle of

$$f(x) = 26\pi \cos\left(\frac{3}{4}x\right)$$

on a *scaled* set of axes.

3. [10 points] Solve the following equation for x where $0 \le x < 2\pi$.

$$\csc^2 x = 4$$

4. [10 points] Find all solutions (i.e., find the general solution) to the equation below:

 $\cos(3x) = -1$