Math 1B Midterm 3 Area & Volume Review Answers

- 1. All answers in the tables are rounded to 2 decimal places.
- 2. For the midterm, you may need to find exact answers (using fractions, radicals, logarithms, trigonometry, e and/or π as needed).

Work together as much as possible to discuss possible errors. (If everyone independently gets the same "incorrect" answer, let me know immediately.)

		VOLUME OF SOLID IF REGION IS REVOLVED AROUND						
REGION	AREA	<i>x</i> = -3		<i>x</i> = 5	y = -1		<i>y</i> = 10	
Р	4.50	155.51		70.69	237.50		73.51	
Q	10.67	201.06		335.10	281.49		455.74	
REGION	AREA	x = 0	x = -2	<i>x</i> = 3	<i>y</i> = -1	<i>y</i> = 2	<i>y</i> = 3	
R	1.50	3.14	21.99	25.13	12.57	15.71	25.13	
S	4.50		73.51	67.86	42.41	42.41	70.69	
Т	0.39	0.59	5.45	6.69	6.43	0.86	3.28	
U	3.44	20.07	63.26	44.71	46.73	18.05	39.64	

	VOLUME IF REGION IS BASE OF SOLID AND CROSS SECTIONS PERPENDICULAR TO X-AXIS ARE						
REGION	SQUARES	SEMICIRCLES	EQUILATERAL TRIANGLES				
Р	8.10	3.18	3.51				
Q	34.13	13.40	14.78				
R	3.00	1.18	1.30				
Т	0.27	0.11	0.12				

Midterm 3 Non-Volume Review Answers

[1] 24[2] π [3] $y \ge \cos^{-1} x, y \le \pi, x \le 1$
revolved around y = -1[4] $y \ge -x, y \le \sqrt{x}$ on [1, 4]
revolved around y = 3[5] $\frac{1}{4}$ [6] 81[7] $2 - 2\sqrt{16 - \pi^2}$ [8] $\frac{33}{16}$ [9] $\frac{15}{2}$ [10] $\frac{\pi}{27}(145\sqrt{145}-1)$ [11] $\frac{47}{16}\pi$ [12] [a] $k = \frac{1}{18}, n = \frac{1}{2}$ [b] $\frac{9\sqrt[3]}{2}$