Math 132: Discussion Session: Week 9

Directions: In groups of 3-4 students, work the problems on the following page. Below, list the members of your group and write down your answer to #1*a* and include your work. Turn **this paper** in at the end of class. You do not need to turn in the question page or answers to there other questions.

Additional Instructions: It is okay if you do not completely finish all of the problems, but you should solve most of the problems. Also, each group member should work through each problem, as similar problems may appear on the exam.

Group Members

Group Answer and Work

8.1: Arclength

1a. Find the length of curve $y = 1 + 6x^{\frac{3}{2}}$ from $x = 0$ to $x = 1$.

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8.1: Arclength

1. Find the exact lengths of the following curves:

   a. $y = 1 + 6x^{\frac{3}{2}}$ from $x = 0$ to $x = 1$.

   b. $x = \frac{1}{3}\sqrt{y}(y - 3)$ $1 \leq y \leq 9$

   c. $y = \sqrt{x - x^2} + \sin^{-1}(\sqrt{x})$ from $x = 0$ to $x = \frac{1}{2}$

   d. $x^2 = (y - 4)^3$ from $(1, 5)$ to $(8, 8)$

8.2: Surface Area

1. Find the exact area of the surface obtained by rotating the given curve about the given axis.

   a. $y = x^3$ from $x = 0$ to $x = 2$

   b. $y = \sqrt{1 + e^x}$ from $x = 0$ to $x = 1$

   c. $y = \frac{1}{3}x^{\frac{3}{2}}$ $0 \leq x \leq 12$

   d. $y = \frac{1}{4}x^2 - \frac{1}{2}\ln x$, $1 \leq x \leq 2$