

Answer Key

Math 132: Discussion Session: Week 3

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

Additional Instructions: It is okay if you do not completely finish all of the problems (especially the challenge problem), 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 Answers

5.5: The Substitution Rule

1. a. $\int_0^4 x\sqrt{x^2+9} dx = \frac{98}{3}$

b. $\int (\cot x) \ln(\sin x) dx = \frac{(\ln(\sin x))^2}{2} + C$

c. $\int \cot x dx = \ln|\sin x| + C$

d. $\int \frac{dx}{(1+\sqrt{x})^3} = -\frac{2}{1+\sqrt{x}} + \frac{1}{(1+\sqrt{x})^2} + C$

2. a and b equal: $a = -1, b = 1$

6.1: Area between curves

1. a. The area is: $4\ln 2 - 2$

b. The area is: $\frac{3\sqrt{3}}{4}$

c. The area is: $\frac{1225}{8}$

6.2: Volumes

1. The volume of the solid is: $\frac{8}{3}$

Challenge Problem Answer

1. The volume of the cone is: 96π