

Math 152
Exam 2
February 26th, 2010

Name: _____

1. Your exam contains 4 questions and 5 pages; Please make sure you have a complete exam.
2. The entire exam is worth 50 points. Point values vary and these are indicated on each problem. You have 50 minutes for this exam.
3. Make sure to **ALWAYS SHOW YOUR WORK**; you will not receive any partial credit unless all work is clearly shown. If in doubt, ask for clarification.
4. Put a box around your final answer where applicable.
5. Leave answers in exact form (as simplified as possible).
6. You are allowed one 4" × 6" notecard (both sides).
7. You may use a calculator for this exam, but I will not give credit for work done solely on a calculator (aside from arithmetic).
8. If you need extra space, attach an extra sheet to the back of the exam and clearly indicate this.

Problem	Total Points	Score
1	12	
2	13	
3	13	
4	12	
Total	50	

1. (12 pts.) Evaluate $\int \frac{5}{x + \sqrt{x+6}} dx$

2. (13 pts.) Find the average value of $g(t) = \frac{\sqrt{t^2-4}}{t^4}$ from $t = 2$ to $t = 4$.

3. (13 pts.) Let R be the region bounded by $f(x) = 4 \arctan x$ and the x -axis from $x = 0$ to $x = 1$.

Find the volume of the solid obtained by revolving R about the y -axis.

4. (12 pts.) The velocity of a velociraptor is given by $v(t) = 9te^{3t} + \frac{4}{\sqrt{t+1}}$ in meters/second.

Find the position function if the velociraptor's initial position is 0 meters.

Extra Credit (2 points): $\int \frac{dx}{x^7 - x}$ (Only attempt this if you are happy with your solutions to the rest of the exam! Use the back of the test if you run out of room.)