Math 125
Midterm 2
May 26, 2006

Name: _____

1. Your exam contains 3 questions and 4 pages; Please make sure you have a complete exam.
2. The entire exam is worth 60 points. Point values for problems vary and these are clearly indicated. 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. If you need extra space, use the back page of the exam and clearly indicate this.
5. You are allowed one 8.5×11 sheet of handwritten notes (both sides). Graphing and scientific calculators are allowed.
6. Leave answers in exact form (as simplified as possible) or round to 4 decimal places.

Problem	Total Points	Score
1	20	
2	25	
3	15	
Total	60	

1. (20 pts.) What is the average value of the function $f(x) = \frac{-2(x+5)}{x^2-2x-8}$ on the interval $[0, 3]$?

2. (25 pts.) Evaluate the following integrals.

(a) (10 pts.) $\int \sin x \ln(\sec x)\, dx$

(b) (15 pts.) $\int \frac{x}{\sqrt{x^2 - 6x + 5}}\, dx$

3. (15 pts.) Let R be the region enclosed by $y = \sqrt[3]{x+1}$ and the x-axis for $0 \leq x \leq 7$. Using cylindrical shells, find the volume of the solid obtained by revolving the region R about the **y-axis.**