

Name: _____ Section Number: _____

TA Name: _____ Section Time: _____

Math 20B.
Midterm Exam 2
May 26, 2006

No calculators or any other devices are allowed on this exam.

Write your solutions clearly and legibly; no credit will be given for illegible solutions.

Read each question carefully. If any question is not clear, ask for clarification.

Answer each question completely, and show all your work.

1. Evaluate the following integrals,

(a) (8 points) $\int x \ln\left(\frac{x}{2}\right) dx,$

(b) (8 points) $\int (x^2 - 3x)e^x dx.$

#	Score
1	
2	
3	
4	
Σ	

2. (10 points) Evaluate the integral $\int \frac{x^2}{\sqrt{16-x^2}} dx$.

3. (15 points) Use a partial fraction decomposition to evaluate the integral

$$\int \frac{2x^3 - 4x^2 - x - 3}{x^2 - 2x - 3} dx.$$

4. (a) (5 points) Does the integral $\int_1^{\infty} \frac{\sin^2(3x)}{x^4} dx$ converge?

(b) (10 points) Evaluate the integral $\int_e^{\infty} \frac{dx}{x \ln^2(x)}$.