

Group Exam 6
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Calculus II  
Professor Johnson  
Fall 2006

Name: \_\_\_\_\_  
Name of group member: \_\_\_\_\_  
Name of group member: \_\_\_\_\_

Problem 1: Evaluate the integrals. If the integral is improper, determine whether or not it is convergent or divergent.

a)  $\int_{-\infty}^1 \frac{1}{\sqrt[3]{x-1}} dx$

Warning! This integral is improper for two reasons! Why?

b)  $\int \frac{1}{e^x - e^{-x}} dx$

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Problem 2: Evaluate the integrals. If the integral is improper, determine whether or not it is convergent or divergent.

a)  $\int \frac{x^4 - 3x^3 + 5x^2 - 12x + 9}{x^2 + 4} dx$

b)  $\int_0^{\pi/4} \frac{\cos(x)}{\sqrt{\sin(x)}} dx$

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Problem 3: Evaluate the integrals. If the integral is improper determine whether or not it is convergent or divergent.

a)  $\int \frac{3x^2 - 10x - 7}{(x - 2)(x^2 + x - 6)} dx$

b)  $\int_1^4 \ln(\sqrt{x}) dx$