Math 106B - Winter 2007 - Antiderivative Worksheet
Determining Integration Techniques

Instructions:
In class, determine what technique(s) to use for each integral.
HW - Solve each integral.
(Other than the last one, the problems are taken from Ostebee and Zorn, section 8.4.)

1. $\displaystyle\int \frac{\sin x}{(3+\cos x)^2}\,dx$

5. $\displaystyle\int \frac{x}{\sqrt[3]{x^2+4}}\,dx$

11. $\displaystyle\int \frac{x}{3x+2}\,dx$

19. $\displaystyle\int \frac{\sec^2 x}{3+\tan x}\,dx$

23. $\displaystyle\int \frac{2x+3}{4x+5}\,dx$

27. $\displaystyle\int \ln x\,dx$

31. $\displaystyle\int \frac{dx}{x^2+2x+3}$

33. $\displaystyle\int \frac{dx}{\sqrt{1-4x^2}}$

47. $\displaystyle\int \frac{x}{(x-1)(x+1)}\ dx$

53. $\displaystyle\int e^x e^{2x}\ dx$

55. $\displaystyle\int \ln\left(1+x^2\right)\ dx$

57. $\displaystyle\int x \arcsin x\ dx$

63. $\displaystyle\int \frac{\tan x}{\sec^2 x}\ dx$

65. $\displaystyle\int \frac{dx}{e^x-1}$

(An integral from class Feb. 12) $\displaystyle\int \frac{dx}{(x^2+4)^2}$