

**PRACTICE FOR MATH 132 SYMBOLIC EXAM, BASED ON  
THE FALL 1999 SYMBOLIC TEST**

**Disclaimer:** Your instructor covers far more materials that we can possibly fit into a four/five questions exams. This practice test, taken verbatim from the Math 132 Fall 1999 Symbolic Test, is meant to give you an idea of the kind and varieties of questions that were asked within the time limit of that particular tests. In addition, the scope, length and format of these old exams might change from year to year. Users beware!

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Find the general antiderivative of each of the following. You must show the details of techniques that you use. Each problem is worth 20 points. No calculator!

1.  $\int \frac{\sqrt{\tan^{-1} x}}{1+x^2} dx$

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2.  $\int e^x \sin x dx$

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3.  $\int \frac{\ln(\ln x)}{x} dx$

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4.  $\int (\cos x) \ln(\sin x) dx$

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5.  $\int e^x \cos x dx$

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6.  $\int \left( \sqrt[3]{40} - 6x^{-2/3} + \frac{5}{x} - \frac{10}{\sqrt{x}} + 2\sqrt[3]{x} \right) dx$

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7.  $\int \frac{\cos(\ln x)}{x} dx$

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8.  $\int \cos^3 \theta \sin^2 \theta d\theta$

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9.  $\int \left( 15 - \sqrt[3]{x^2} + x^4 - \frac{2}{x^7} + \frac{6}{x} \right) dx$

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10.  $\int t^2 \sin(5t) dt$

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