Mini-exam 2 (10 POINTS TOTAL)   MATH 141, SUMMER 2015

NAME:

Problem 1 Find the derivative of $\sin^{-1}(e^{-x})$.

(a) $\cos^{-1}(e^{-x})$

(b) $e^x \cos e^x$

(c) $\frac{e^{-x}}{\sqrt{1-e^{-x}}}$

(d) $\frac{-e^{-x}}{\sqrt{1-e^{-2x}}}$

(e) $\frac{e^{-x}}{\sqrt{1-x^2}}$

Problem 2 Find $\int_0^{\ln 9} e^\theta \sqrt{e^\theta - 1}\, d\theta$.

(a) e^2

(b) $32\sqrt{2}$

(c) $\frac{32}{3}\sqrt{2}$

(d) $16\sqrt{2}$

(e) 9

Problem 3 Evaluate $\int \frac{dx}{\sqrt{9x^2-4}}$.

(a) $\frac{1}{3} \ln \left| 3x + \sqrt{9x^2 - 4} \right| + C$

(b) $\frac{3}{2} \ln \left| \sin^{-1} 3x + \sqrt{9x^2 - 4} \right| + C$

(c) $\frac{\left| \ln \sqrt{9x^2 - 4} \right|}{18x} + C$

(d) $\sec^{-1} 3x + C$

(e) $\frac{1}{2}\tan^{-1} 3x - \ln(9x^2 - 4) + C$

Problem 4 Evaluate $\int \frac{5x+2}{x^2+x}dx$

(a) $\ln\left|x^5(x^2 + x)^2\right| + C$

(b) $\ln\left|x^2(x + 1)^3\right| + C$

(c) $\ln\left|x^3(x + 1)^2\right| + C$

(d) $\ln\left|x(x^2 + 1)^2\right| + C$

(e) $\ln|x(x + 1)| + C$

Problem 5 Evaluate $\int_0^{\pi/4} \sin^3 2\theta \cos^2 2\theta d\theta$.

(a) $\frac{1}{15}$

(b) $\frac{-1}{12}$

(c) $\frac{1}{3}$

(d) $\frac{2}{5}$

(e) $\frac{-2}{15}$

Feedback:

1. What aspects of the course have been helpful in your learning?

2. What aspects of the course could use improvement?

3. Any comments on the lecture format?