Mini-exam 1 (10 points total) Math 141, Summer 2015

Name:

Problem 1 Suppose that $f(1) = 3$, $f(2) = 1$, $f(3) = -2$, $f'(1) = -2$, $f'(2) = -3$, $f'(3) = 1$. Which one of the following is equal to $(f^{-1})'(3)$?

(a) $-\frac{1}{2}$

(b) $\frac{1}{2}$

(c) 1

(d) 2

(e) -1

Problem 2 Differentiate $f(x) = \ln(\sin(\ln x))$.

1. $\cot(\ln x)$
2. $\frac{\cot(\ln x)}{x}$
3. $\frac{1}{\sin(\ln x)}$
4. $\frac{1}{x\sin(\ln x)}$
5. $\frac{\tan(\ln x)}{x}$

Problem 3 Let $f(x) = e^{x^2}$. Find $\lim_{x\to 0} f'(x)$ (note the derivative).

Problem 4 Find $\int \tan x dx$.

(a) $\ln|\sec x| + C$

(b) $-\cot x + C$

(c) $\frac{1}{2}\sin^2 x + C$

(d) $\sec^2 x + C$

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

Problem 5 Find $\int_1^2 ye^{y^2}\,dx$.

Feedback:

1. What aspects of the course have been helpful in your learning?
2. Is the amount of assigned homework appropriate?
3. What aspects of the course could use improvement?
4. Any comments on the lecture format?