Math 151   Name: _____

QUIZ 2 (CHAPTER 10)
MATH 151 – SPRING 2004 – KUNIYUKI
105 POINTS TOTAL, BUT 100 POINTS = 100%

Show all work, simplify as appropriate, and use "good form and procedure" (as in class).
Box in your final answers!
No notes, books, or calculators allowed.

1) Find the limits. Write ∞ or $-\infty$ when appropriate. If a limit does not exist, and ∞ and $-\infty$ are inappropriate, write "DNE" (Does Not Exist). Indicate indeterminate forms whenever appropriate, though you don't have to indicate signs for them. Indicate when you are applying L'Hôpital's Rule.

a) $\lim\limits_{x \to -6} \dfrac{\sqrt{x+55}-7}{x^2-36}$

b) $\lim\limits_{x \to 0} \dfrac{x+\tan x}{\sin x}$

c) $\displaystyle\lim_{x\to 0^+} \frac{x^2+2}{\sin x}$

d) $\displaystyle\lim_{x\to 0^+} \left(\csc x - \cot x\right)$

e) $\displaystyle\lim_{x\to\infty} x^{1/x}$

YOU MAY CONTINUE ON THE NEXT PAGE.

2) Indicate whether the integral converges or diverges. If it converges, find its value. Either way, show all work and use good form, as in class!

a) $\int_{-\infty}^{-3} e^{3x+2}\, dx$ (8 points)

Does the above integral converge or diverge?

b) $\int_{-\infty}^{\infty} \dfrac{3x}{\left(x^2+1\right)^4}\, dx$

b cont.)

Does the above integral converge or diverge?

c) $\int_5^\infty \dfrac{1}{\sqrt{x-5}}\, dx$

Does the above integral converge or diverge?

d) $\int_0^{33} (x-1)^{-1/5} \, dx$

Does the above integral converge or diverge?