CALCULUS II, SECTION K
Quiz # 2
September 8th 2010

First Name : _____

Last Name : _____

1. Is the following integral convergent ?

$$\int_0^\infty \frac{e^{-4x}\,dx}{x^{2/5}} \;=\;$$

Converges ☐   *Diverges* ☐

2. Compute the 57-th derivative of g at $x = 0$ if

$$g(x) = 29 - 13\,\frac{x^{57}}{57!} + 123\,\frac{x^{169}}{169!}$$

$$g^{(57)}(0) \;=\;$$

3. Give the Taylor *expansion* to order $3n$, including the remainder for
$\big($*Hint : gives the exact expression of the remainder, without integrals*$\big)$

$$\frac{1}{1 - x^3} =$$

4. Give the Taylor *expansion* to order $2n + 1$ for

$$\ln\left\{\frac{1 + 2x}{1 - 2x}\right\} =$$

5. Give the Taylor *expansion* to order 2, **near x $= \pi/6$**, for

$$\sin x =$$