QUIZ 9 - MATH 152 Friday, April 14

YOUR NAME:_____ George Voutsadakis

Read each problem **very carefully** before starting to solve it and do only what is asked. Each problem is worth around 5 points. It is necessary to show **all** your work. Correct answers without explanations are worth 0 points. GOOD LUCK!!

1. [6 points] Find the radius and the interval of convergence of the power series $\sum_{n=1}^{\infty} \frac{1}{2^n n}(x+3)^n$.

2. [4 points] Find an equation for the tangent line to $\begin{cases} x(t) &= t^2 \\ y(t) &= \sqrt{t^3+1} \end{cases}$, at $t = 2$.

3. [4 points] Find the length of the curve $\begin{cases} x(t) &= e^t + e^{-t} \\ y(t) &= 5 - 2t \end{cases}$, $0 \leq t \leq 3$.

(**Hint**: After setting it up, perform your algebra steps very carefully!)