Math 141 **Quiz 2** **10/29/2014**

Name: _____

Answer the questions on the exam and not on a separate sheet of paper. Give justification for false answers in the True/False section. For all other questions, please circle your answers and show your work for full credit. There are 4 questions for a total of 50 points.

True or False: Please circle either true or false. Give justification for false statements.

_____ 1. (5 points) $\dfrac{d}{dx}\left(\dfrac{1}{\tan^{-1}(x)}\right) = -\dfrac{1}{(\tan^{-1} x)^2(1+x^2)}$.

A. True B. False

_____ 2. (5 points) If $y = x^x$, then $\dfrac{d}{dx}(y) = x \cdot x^{x-1}$.

A. True B. False

Short Answer.

3. (20 points) Determine the point(s) at which the graph of the function $y^4 = y^2 - x^2$ has a horizontal tangent line. Make sure and use complete sentences (and words) to justify your answer.

4. (20 points) Use linear approximation (or differentials) to estimate the value of $1/1002$. Make sure and use complete sentences (and words) to justify your answer.