Name: _

Math 152 Calculus II – Crawford

Books, notes (in any form), and calculators are not allowed. Show all your work. Good Luck! **1.** (4 pts) Find the equation of the tangent line to $y = 5^x$ at x = 2.

2. (3 pts) Differentiate the following. [Do not simplify.]

 $f(x) = \log_2(4x - 3x^2)$

3. (4 pts) Evaluate the following integral.

 $\int \sinh x \sqrt{\cosh x} \, dx$

4. (4 pts) A sample of tritium-3 decayed to 94.5% of its original amount after a year. What is the half-life of tritium-3? [Show all your work. Leave answers exact – you don't need a calculator.]