Math 129 section 01 Summer 2013 quiz 1 Name: _____

1. Write the name by which you would like to be referred. ('Bob' instead of 'Robert')

2. Identify where an when you took your most recent calculus course and well as the main topics of the course.

3. Show the derivative of x^3 is $3x^2$ from the definition of the derivative.

4. Evaluate the limits
   (a) $\lim_{x\to 0} \dfrac{\sin(3x)}{x}$

   (b) $\lim_{y\to 3} \dfrac{y}{y^2+1}$

   (c) $\lim_{z\to 5} \dfrac{z^2-6z+5}{z^2-10z+25}$

5. Find the tangent line to the function $f(x) = 2^{x^2+1} + 5$ when $x = 2$

Reading quiz sections 7.1 and 7.2:

6. (a) Integration by substitution is the reverse of what differentiation operation?

   (b) Integration by parts is the reverse of what differentiation operation?

7. In the following integrals, Identify the appropriate substitution. Do not complete the integral.

   (a) $\int 3x^2 \cos(x^3) dx$

   (b) $\int 7te^{t^2+1} dt$

   (c) $\int \frac{e^t}{1+e^t} dt$

8. Identify which method looks more promising to evaluate the integral. If substitution write your proposed substitution. If integration by parts Identify your components.

   (a) $\int \frac{x}{(1+x^2)^2} dx$

   (b) $\int \frac{x}{e^x} dx$

   (c) $\int x^4 \ln(x) dx$

   (d) $\int \frac{\sin x}{2+\cos x}$