Quiz 1

This quiz will NOT count towards your grade!!!

Name:_____

1. Simplify the following into a single fraction:

$$\frac{1}{2} + \frac{1}{x} =$$

2. If I put \$100 into a bank account earning 5% interest compounded annually, how much will I have after 5 years?

3. If a culture of bacteria doubles every hour, write an equation for the amount of bacteria at time t if at time $t = 0$ there was 0.001 mg.

4. Find the derivative of the function $f(x) = x + \sin(x^2)$.

5. Evaluate the following integral:

$$\int_0^\pi x\cos(3x^2)dx.$$

6. Explain what the derivative of a function $f(x)$ at the point a is using words and pictures. Your explanation should be given so as to be entirely understandable to a student that has NO EXPERIENCE with calculus.

7. Repeat Problem 6, this time explaining what the quantity $\int_a^b f(x)dx$ means using words and pictures. Explain how one might calculate this quantity, again assume your audience has no experience with calculus!