Quiz 6

Please show your work.

Problem 1  If $x = \tan y$, what is $dy/dx$?
   a) $\sec^2 x$
   b) $\cos^2 y$
   c) $\sec x \cot y$
   d) none of the above

Problem 2  What is the derivative with respect to $x$ of the function $\log_a x$?
   a) $\ln a/x$
   b) $\log_a x/a$
   c) $x/\ln a$
   d) none of the above

Problem 3  Find $dy/dx$ if $y = 2^x$
   a) $2^x \ln 2$
   b) $2^x \ln x$
   c) $2^{x-1}$
   d) none of the above

Problem 4  Find $dy/dx$ if $y = \cos^{-1}(x^2)$
   a) $\sqrt{1-x^4}$
   b) $1/\sqrt{x^4 - 1}$
   c) $-2x/\sqrt{1-x^4}$
   d) none of the above

Problem 5  Draw a picture of the animal from the Chinese Zodiac that most closely resembles your professor.