

NAME: _____

YOUR GRADE IS BASED ON THE PROCESS AS WELL AS THE FINAL RESULT. SHOW ALL YOUR STEPS CLEARLY SO YOU WILL BE ELIGIBLE FOR THE MOST PARTIAL CREDIT. YOU MAY USE A CALCULATOR, BUT NO NOTES, BOOKS, OR OTHER STUDENTS. GOOD LUCK!

1.) (5 pts.) Let $f(x) = x^2$ and $g(x) = \cos x$.

a.) (2 pts.) Write the formula for $h(x)$, where $h(x) = f(g(x))$.

b.) (3 pts.) Compute $h'(x)$.

2.) (5 pts.) Use implicit differentiation to compute $\frac{dy}{dx}$ for the hyperbola $4x^2 - 9y^2 = 36$.
(That is, differentiate implicitly and solve for $\frac{dy}{dx}$.)