Math 101-171-Sec.49
Quiz #4

Name: **ID:** **SR:**

Question1: Find $\frac{dy}{dx}$ if $tan^{-1}(x^2y) = x + xy^2$

Question2: If $y = \sqrt{x}e^{x^2}(x^2 + 1)^{10}$, find $\frac{dy}{dx}$

Question3. A particle moves on a vertical line so that its coordinates at time t is given by $s(t) = t^3 - 12t + 3$, where t in seconds, s in meters. Find

a. Find the acerbation when the velocity is 36 m/s.

b. Find the distance that the particle travels in the interval $0 \leq t \leq 3$.

Question4: A range finder tracks a hot air balloon rising straight up from a level of field $500\ ft$ from the liftoff point. At the moment the range finder's elevation angle is $\frac{\pi}{4}$, the angle is increasing at rate of $0.14\ rad/min$. How fast the balloon rising at that moment?