QUIZ 3
Math 220-51

NetID: October 15, 2009
(Please don't put your name!)

Question 1. *(8pts) Let $y = (x^2 - 3)\sin(x^3 + x)$. Find y'.*

Question 2. *(8pts) The equation $\dfrac{x}{y} + \dfrac{3y}{x} = 4$ describes an ellipse in the plane. Find the slope of the tangent line at the point $(3, 1)$. (Hint: don't take the derivative immediately!)*

Question 3. *(9pts) At noon, ship A is located precisely 80 km west of ship B. While ship A is sailing north at a constant speed of 20 km/h, ship B is sailing west at constant speed 25 km/h.*

(a) At what rate is the distance between the two ships changing at 2:00PM?

(b) Is their distance increasing or decreasing at that time?