MATH 1550 - Calculus I - Section 1
Summer 2013

HOMEWORK 4

Due at the beginning of class, Monday, July 8th

Read the questions carefully. You must *show your work* to get full credit.

(1) Given $\ln\left(x^3 \sin y\right) + \cot y - 9e^{5x} = 24$, find $\dfrac{dy}{dx}$

(2) At time $t = 0$, Ship A is located 100 miles north and 120 miles west of Ship B. Ship A is moving east at 30 mi/hr and Ship B is moving north at 20 mi/hr. Find the rate of change of the distance between Ship A and Ship B when $t = 3$.

(3) Find the maximum and minimum value of $f(x) = e^x(3x^2 - x - 1)$ on the interval $[-3, 0]$