Name: Class quiz 9 November 9, 2016

I) Consider a plane is flying horizontally at an altitude of 3 miles. The plane passes above a radar station with a constant speed of 300mi/hr. At what rate is the distance between the plane and the station increasing when the plane is 5 miles away from the station.

II) Find the linearization $L(x)$ of the following function at the give value a.

a- $\cos(x)$ at $a = \frac{\pi}{3}$.

b- $x^2 + 3x - 1$ at $a = 1$.

III) Use linear approximation to approximate $(0.99)^3$