

Name:

Class quiz 8

October 31, 2016

I) Find the derivatives of the following functions:

a-  $f(x) = \ln(\sin(\ln(x)))$

b-  $y = (x + 1)^{\tan(x)}$  (Use logarithmic differentiation)

II) Find  $\frac{d}{dx}y$ .

$$y + 3 \ln(x^2 + 5) = \cos(xy^2)$$

IV) Consider the following equation of motion of a particle (P) :  $f(t) = t^3 - 6t^2 + 9t + 1$  in feet per seconds.

a- Find the velocity  $v(t)$

b- Find  $v(2)$

c- Find the acceleration  $a(t)$

d- When is the particle at rest.

e- When is the particle moving forward.

f- Is the particle speeding up or slowing down at  $t = 2$  sec.

g- What is the distance travelled between  $t = 0$  and  $t = 4$ .