MATH 1271 Fall 2012  
Recitation Quiz 3
Sep 27, 2012  
Name: ____________________
Time Limit 20 Minutes  
Section#: _______

A. (30 points) (15 pts each)

1. (True or False): $|x - 2|$ is differentiable at 2.
   a) True
   b) False

2. Look at the graph below:

   The horizontal asymptote(s) is(are):
   a) $x = 1$
   b) $x = 1$ and $y = -1$
   c) $y = -1$ and $y = 1$
   d) $x = 1$ and $y = 1$

B. (70 points)

1. (20pts) Find the equation of tangent line to the curve $y = 2x^2 - x + 1$ at $(1, 2)$.
2. (20pts) The displacement $S$ of a rocket satisfies an equation: $S(t) = \sqrt{t}$.
Find the instantaneous velocity of the rocket at $t = 1$.

3. (30pts) $f(x) = \frac{\sqrt{9x^2 + 1}}{3x - 6}$
   a) Find the vertical asymptote(s):

   b) Find the horizontal asymptote(s):

\^{END}