To continue our learning journey, you will have the option of retaking parts of this exam. I will make a re-test with similar topics and questions. Any question that you did not get a mastery on in this test you may retake. If you do better on the retest, that is the score you will get for that question.

The goal is for you to learn the material. This does not always happen immediately. Different people learn at different rates. Some people have already taken Calculus and already know most of the material we will be covering; for others, this is the first time they have had any calculus. If you are willing to work at it, you can master the material.

To prepare for the re-test:
- for any question from the test you wish to redo, you must write out the correct answer for the problem and submit it.
- If you received received a T (or U), you must also do a supplemental HW problem on that topic (see attached list) and submit it.
You are encouraged to do this test re-do preparation with your classmates, at the TA sessions, PLI sessions or come see me in office hours.

Test 1 Feedback:

Q1. a. Need to state all the limit laws you use.
   b. Confusion between taking a limit and taking a derivative.
   c. If you get 0/0 in the limit, then what do you try?
Need to keep writing down lim until the last step.

Q2. Do not forget to write down your units for rate of change. What are units for rate of change in this problem?
   d. Two main ways to do this.
      (i). Figure out who much T changes by when the time increases by $\frac{1}{2}$ hours.
      (ii). Get the “tangent line” equation and use this.

Q3. We want to go from our intuitive understanding of continuity to a more rigorous understanding using the definition of continuity.
   i. Hence we need to examine $\lim_{x \to a} f(x)$,
which actually involves examining the two one-sided limits.
   ii. Then one must also evaluate $f(a)$.
   iii. Then one must check if these two things ($\lim_{x \to a} f(x)$ and $f(a)$) are equal.
   c. To start with, $f(3)$ is not defined. The question asks you to define a value for $f(3)$ so the resulting function is continuous at $x=3$. Again discuss this following the above steps.

Q4: a. Do not forget the limit in the definition (as $h \to 0$ not x).
   b. In your explanation be sure to give the formula for the slope of the secant line.
What is this formula? As $h \to 0$, this slope approaches the slope of the tangent line.
   c. Be careful how you write out your answer. You need to include $\lim_{x \to a}$.
d. Use either \( \frac{d}{dx} (\ldots) \) notation of \((\ldots)’\) notation. Do not forget to mention the sum rule. Your write up should be three or four lines long so you can show the steps one at a time.

e. Once you have the general formula for \( f'(x) \) from (c) or (d), what value of \( x \) should you use to get the slope of the tangent line in question? What is the \( y \) value corresponding to \( x = 2 \)?

Q5: a. Since the question did not ask you to use the definition of derivative or to write out the rules, you can calculate the derivative the “quick way” to get \( v(t) \).

c. What type of function is \( v(t) \)? (i.e. in what category of function is it)? What should its graph look like?

d. Label the axis and put in the key values. Ex. What is \( s(0) \)?

e. Relate your answer to (c). What is the relationship between positive velocity and moving up?