Concepts to know # 3
sections 5.1-5.5 and 7.1-7.4

- Measure Distance Traveled or accumulated change
  - Given interval $[a, b]$ and n=number of rectangles Total distance travel between $t = a$ and $t = b$ is equal to the area under the graph of $v(t)$ between $t = a$ and $t = b$.
  - approximating with Left sum or right sum.
  - Be able to tell if it is an over or under estimate.
  - be able to compute if given a data set.
- Definite Integral
  - $\int_a^b f(x)dx$
  - approximating by rectangels or other methods.
  - using `fnInt(function, X, lower, upper)`
- Definite Integral as Area
  - If $f(x)$ is not always positive on $[a, b]$, then $\int_a^b f(x)dx$ is a difference of areas.
  - Area between curves $\int_a^b (top - bottom)dx$
- Interpretions of Definite Integral
  - Be able to put units
  - If $f(x)$ gives the rate of change then $\int_a^b f(x)dx$ = total change between $x = a$ and $x = b$.
- Antiderivatives
  - indefinite integration rules
  - solving for the constant
  - u-substitution
- Fundamental Theorem of Calculus
  - computed from a graph
  - computed with the calculator
  - computed by hand
- improper integrals
- Any additional topic discussed in class.
  - derivative rules
  - interpreting a graph