Day 25 is Tuesday, March 19, 2013

Recall Yesterday's Discussion of Section 5-5

Absolute Extrema

Definition: An absolute max for a function is a y-value that is the greatest y-value for all x-values that are in the domain.

An absolute min is a y-value that is the least y-value for all x-values in the Domain.

Theorem 2

The only places where absolute max/mins might occur is at x-values that are

- endpoints of the domain
- critical values.

(But absolute max/mins might not occur!)

Theorem 1 If the domain of a function is a closed interval and the function is known to be continuous on that domain, then the function is guaranteed to have both an absolute max and an absolute min on that domain.

The "closed Interval Method" Used for finding the absolute max & absolute min for a function f that is known to be continuous on a closed interval.

- Find the critical values of f
- List the important x-values (the x-values where there could possibly be an absolute max or min)
  - the critical values in the domain
  - the endpoints
- Find the corresponding y-values.
- Identify the greatest and least y-values on that list. These will be the absolute max and absolute min.