

WHERE TO FIND EXTREMA (§4.1)

Relative (or Local) Extrema (Maximums and Minimums) are values of the function that are larger (max) or smaller (min) than the function values "close" by.

The relative extrema are located where the

FIRST DERIVATIVE EQUALS ZERO OR IS UNDEFINED.

These points are called *Critical Points*

♪ : Just because the first derivative equals zero or is undefined at a particular point does NOT guarantee that there is a relative maximum or minimum at that point.

Absolute Extrema are the largest or smallest function values on the entire interval. You are guaranteed an absolute maximum or minimum on a CLOSED INTERVAL.

♪ : On a CLOSED INTERVAL ... CHECK THE ENDPOINTS for Absolute Extrema!