**4.3 The First Derivative Test**

Not all critical numbers give rise to a maximum or minimum value.

Consider 

 So how do we tell whether there is a maximum / minimum?

**First Derivative Test**

Let *c* be a critical number of a continuous function *f*.

 1.

 2.

 3.

**First Derivative Test for Absolute Extreme Values**

Let *c* be a critical number of a continuous function *f* defined on an interval.

 1.

 2.

**First Derivative Test for Absolute Extreme Values**

Let *c* be a critical number of a continuous function *f* defined on an interval.

 1.

 2.

Find the local maximum and minimum values of 

Find the local maximum and minimum values of 

Find the absolute minimum value of the function 