

- (1) If f is continuous on $[a, b]$, then
- (a) there must be numbers m and M such that $m \leq f(x) \leq M$, for $x \in [a, b]$
 - (b) there must be local extreme values, but there may or may not be an absolute maximum or absolute minimum value for the function.
 - (c) any absolute max or min would be at either the endpoints of the interval, or at places in the domain where $f'(x) = 0$

- (2) On a toll road a driver takes a time stamped toll-card from the starting booth and drives directly to the end of the toll section. After paying the required toll, the driver is surprised to receive a speeding ticket along with the toll receipt. Which of the following best describes the situation?
- (a) The booth attendant does not have enough information to prove that the driver was speeding.
 - (b) The booth attendant can prove that the driver was speeding during his trip.
 - (c) The driver will get a ticket for a lower speed than his actual maximum speed.
 - (d) Both (b) and (c).
- Be prepared to justify your answer.