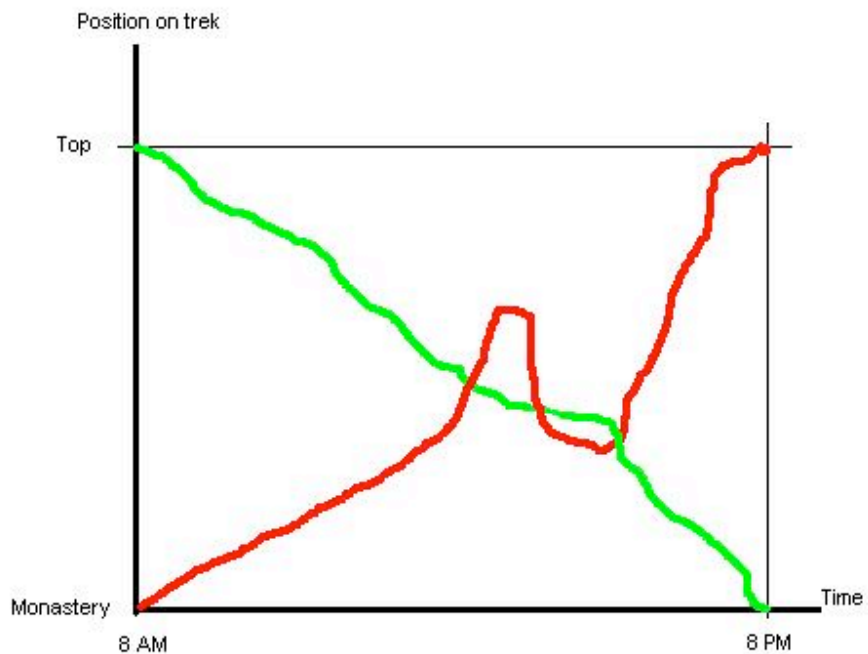


Intro to Calculus: Lesson for Homework 29— Continuity and the Intermediate Value Theorem

Solutions

Monk Problem



In it, one finds the position along the trek (on the vertical axis) drawn as a function of time. The red curve describes the ascent, and the green curve describes the descent. As is immediately evident, the two curves must cross somewhere – at least once – if the green curve has to start at 8AM at the monastery and end at 8PM at the top of the mountain, and vice-versa for the red curve.

An even more convincing argument involves thinking at two monks, one departing from the monastery and one from the summit at the same time. They are bound to meet somewhere along the track, and when they do, it is by definition the same time on the same place...