

Week 76 (2/23/04)

Crawling ant

A rubber band with initial length L has one end tied to a wall. At $t = 0$, the other end is pulled away from the wall at speed V (assume that the rubber band stretches uniformly). At the same time, an ant located at the end not attached to the wall begins to crawl toward the wall, with speed u relative to the band. Will the ant reach the wall? If so, how much time will it take?