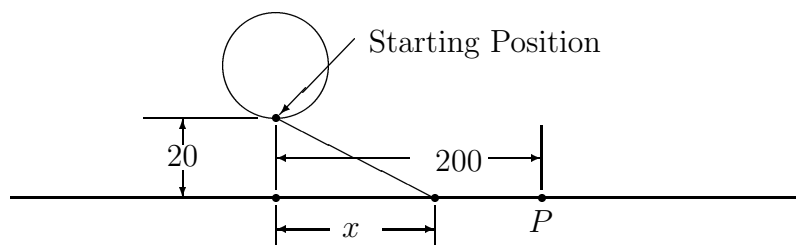


Homework

Due Thursday, October 19

Read up to page 140 in the text.

1. A man is on an island 20 meters from the shore of a lake. He is able to swim at 100 meters/min. and to run at 400 meters/min. Let P be a point on the shore of the lake 100 meters from the point of the shore closest to the island. We are interested in seeing how long it takes the man to get from the island to point P . He takes the following route. He first swims to a point that is x meters from the closest point to the island and then runs the rest of the way to the point P .



- (a) Find a formula for the time T it takes him to reach P as a function of the distance x .
- (b) Use Maple, or a graphing calculator to graph T as a function of x .
- (c) By using the graph estimate the value of x that minimizes the time.

2. Pages 117–118 problem 10

3. Pages 132–134 problems 11, 12, 17

4. Page 140 problem 2a,b,c,d