**G-MG Running around a track I**

**Task**

An Olympic 400 meter track is made up of two straight sides, each measuring 84.39 meters in length, and two semi-circular curves with a radius of 36.5 meters as pictured below:

The picture is drawn to scale with one centimeter in the picture representing 20 meters on an actual olympic track. The one of the eight lanes which is closest to the center of the track is called the first lane.

a. What is the perimeter of the track, measured on the innermost part of the first lane?

b. Each lane on the track is 1.22 meters wide. What is the perimeter of the track measured on the outermost part of the first lane?
c. In order to run the intended 400 meters in a lap, how far away from the inside of the first lane would a runner need to be?

Below is an enlarged picture of one of the straight sections of the track with the blue line representing the line around the track with perimeter exactly 400 meters: