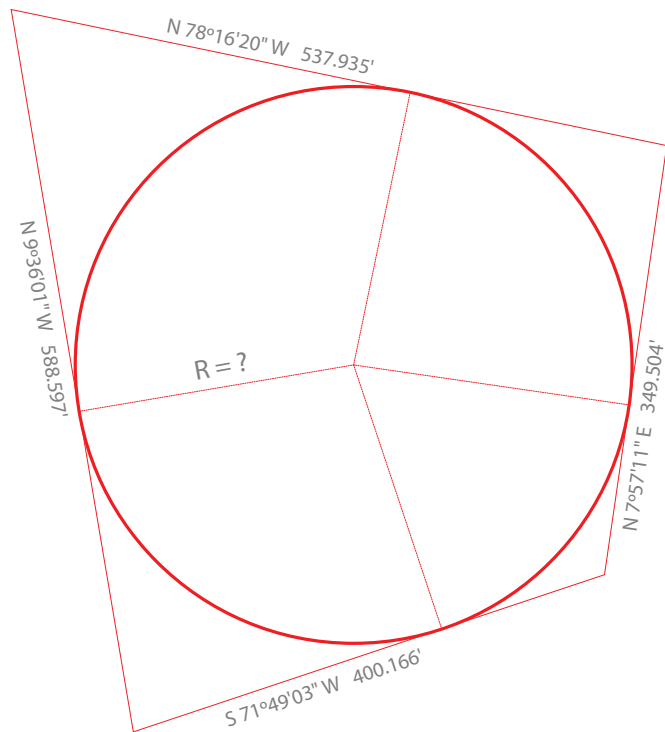


Problem
150

by Dave Lindell, L.S.

The circle shown is tangent to all four sides of the quadrilateral.
What is the radius of the circle?
Can the quadrilateral be circumscribed?



Problem
151

by Benjamin Bloch, Ph.D.

Surveying in Depth

Imagine using a laser at each corner of a surveyed square acre of land to drill a vertical plumb line towards the center of the earth. At each depth the laser outlines a new projected area for the surface acre. As the depth increases, the projected area decreases, until a depth is reached where the projected area is exactly half an acre.

At what depth, d , assuming a spherical Earth of radius, $R = 3,963$ miles, is the projected area exactly half an acre?