



Construct altitude AE. Draw diameter FH of circle P parallel with AE.

Construct HJ perpendicular to AE. Construct CK parallel with AE, cutting HJ at G, with AK perpendicular to CK.

Angle AKE = angle KAC = angle ACE = angle KEC. The triangles ALK and ELC are isosceles and congruent and have an altitude of 2R.

Calculate the angles of triangle ABC by Law of Cosines:
Angle BAC = angle BCA = $61^{\circ}42'57''$, angle ABC = $56^{\circ}34'06''$,
And angle EAC = $28^{\circ}17'03''$

HF = GC = JE = JA = GK = 2R.

Then AE = 4R, but AE = $660.664 \cos(28^{\circ}17'03'')$ = 581.786, so R = 145.447.