Solution 210

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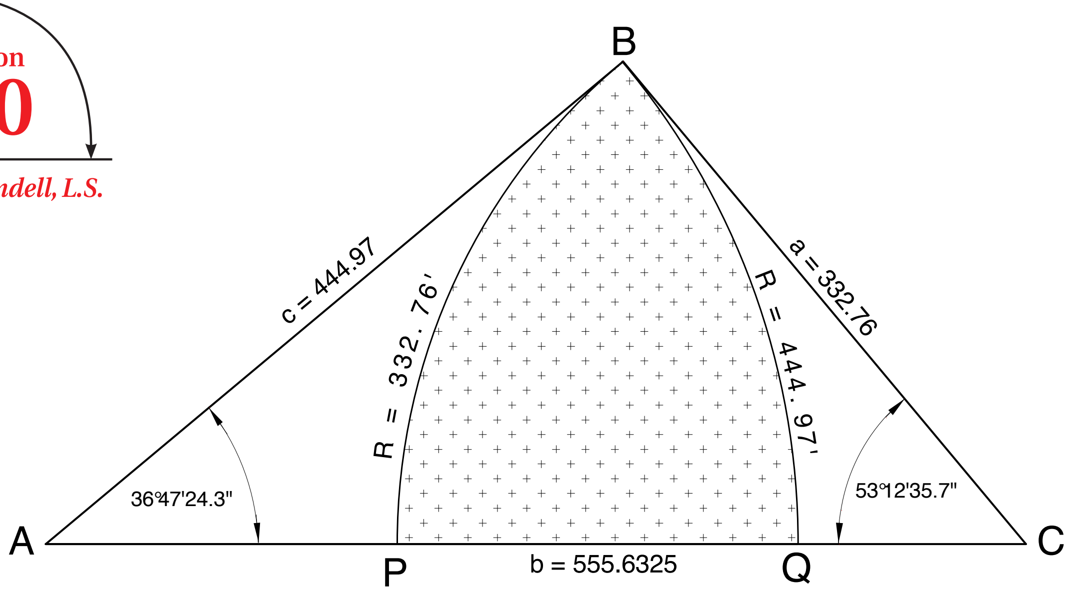

The area bounded by the two arcs and the hypotenuse is equal to the sum of the sectors ABQ and CBP minus the area of the triangle:

$$AC = \sqrt{AB^2 + BC^2} = \sqrt{444.97^2 + 332.76^2} = 555.6325$$

Angle A = $\tan^{-1}(332.76 \div 444.97)$ or $\cos^{-1}(444.97 \div 555.6325)$ = 36°47'24.3"

Angle C = $\tan^{-1}(444.97 \div 332.76)$ or $\cos^{-1}(332.76 \div 555.6325)$ = 53°12'35.7"

Area sector ABQ = $\frac{1}{2}(444.97^2)(\text{Angle } A_{radians})$

Area sector CBP = $\frac{1}{2}(332.76^2)(\text{Angle } C_{radians})$

Angle $A_{radians}$ = $(36°47'24.3'') \cdot \pi \div 180 = 0.642108086$

So that area sector ABQ = $\frac{1}{2}(444.97^2)(0.642108086) = 63{,}568.155$

Angle $C_{radians}$ = $(53°12'35.7'') \cdot \pi \div 180 = 0.928688241$

And area sector CBP = $\frac{1}{2}(332.76^2)(0.928688241) = 51{,}416.461$

The area of the triangle is $\frac{1}{2}(444.97)(332.76) = 74{,}034.109$

And the required area is $63{,}568.155 + 51{,}416.461 - 74{,}034.109 = 40{,}950.51$