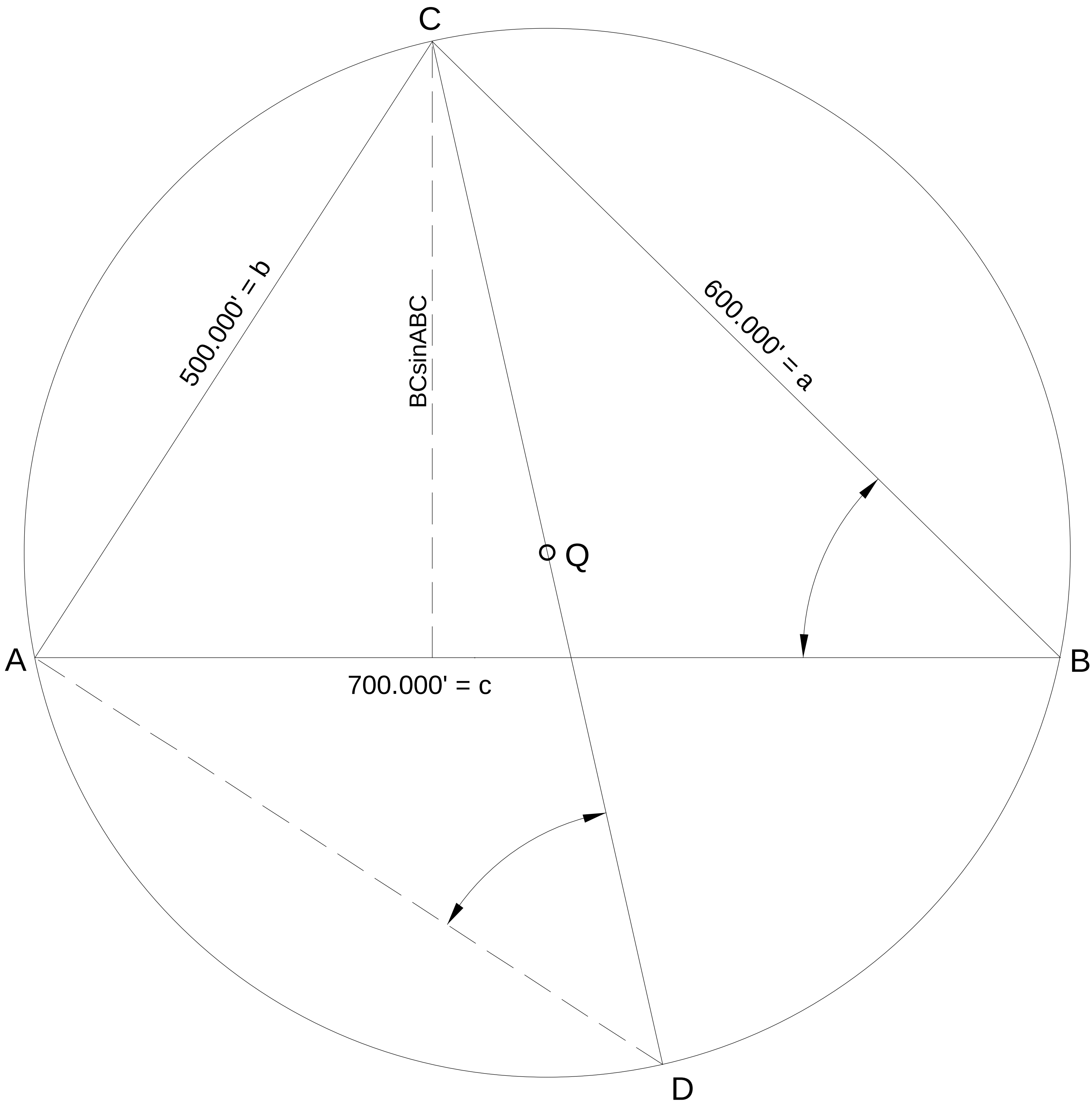
C
500.000' = b
BCsinABC
600.000' = a
Q
A
B
700.000' = c
D

First, draw the circumcircle with center at Q.

(Q will be at the intersection of the perpendicular bisectors of any two chords.)

Drop a perpendicular from C to AB.

Draw a line from C to Q and extend it to the circumference of the circle at D. Draw line AD. The angle ADC is equal to angle ABC since they subtend the same chord (AC) from a point on the same circle.

The perpendicular from C to AB is equal to BC·sinA and sinA = AC/DC, making the area of the triangle ½ (BC·AC/DC)·AB. But DC is twice the circumcircle radius which is found by

$r = \frac{a \cdot b \cdot c}{\sqrt{(a+b+c)(a+b-c)(b+c-a)(c+a-b)}}$, where a, b, and c are the sides opposite vertices A, B, and C, respectively.

In this case, r =

$$\frac{600 \cdot 500 \cdot 700}{\sqrt{(600+500+700)(600+500-700)(500+700-600)(700+600-500)}}$$

$= \frac{210{,}000{,}000}{\sqrt{(1800)(400)(600)(800)}}$ = 357.21725, and CD = 714.4345

The area is then $\frac{600 \cdot 500 \cdot 700}{(2) \cdot 714.4345}$ = 146,969.386 square units.