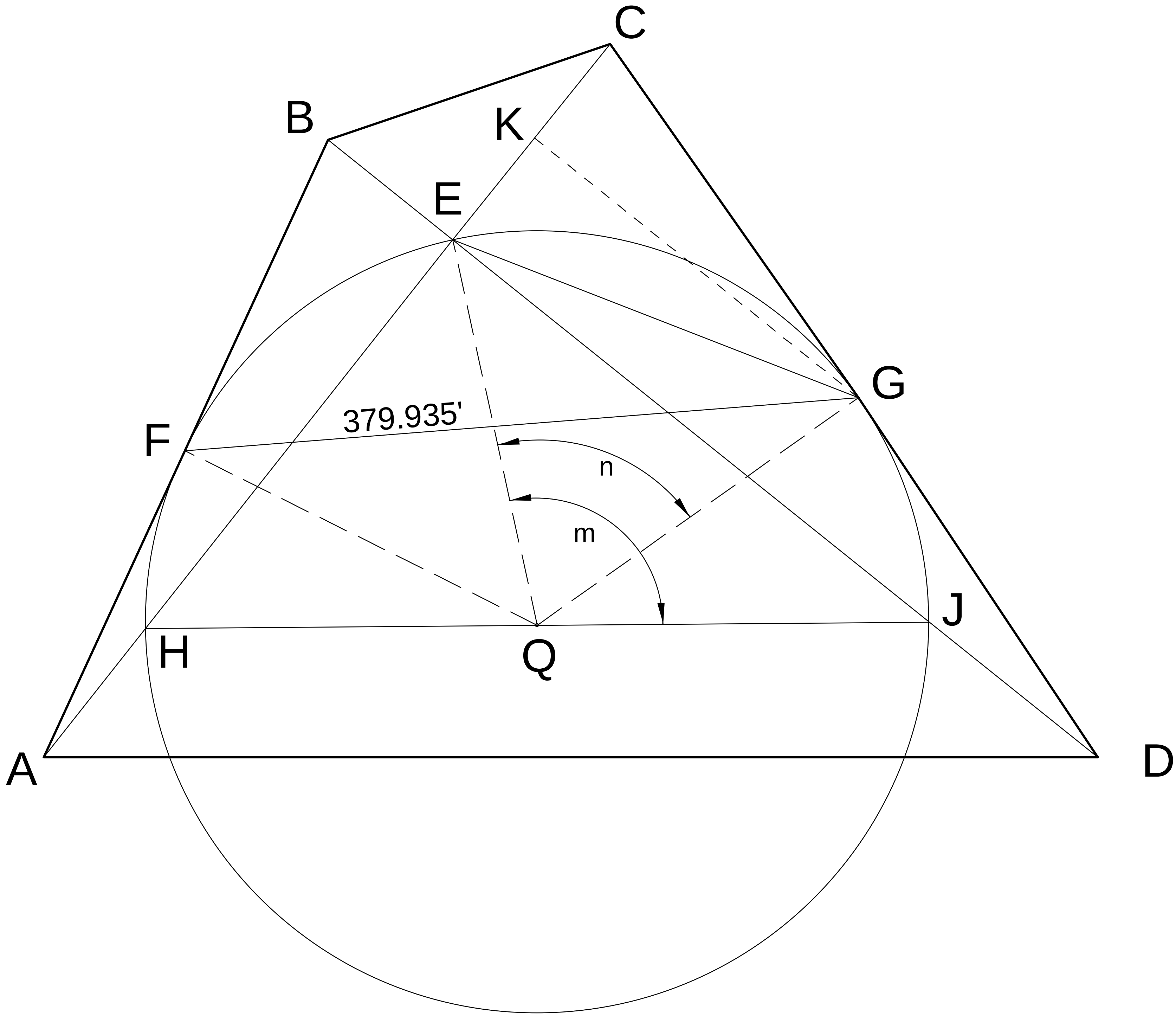

C
B
K
E
G
379.935'
F
n
m
J
H
Q
A
D

Draw radii QF, QE and QG and draw GK$\perp$EC (and parallel with ED)

In similar right triangles KC:CG :: EC:CD, so KC = ½ EC = EK

$$\measuredangle QEC = \measuredangle QEJ + 90^\circ = \frac{180^\circ - m}{2} + 90^\circ = 180^\circ - \frac{m}{2}$$

Because triangle EGC is isosceles, $\measuredangle CEG = \measuredangle ECG = 90^\circ - \frac{m}{2} + \frac{n}{2}$

$$\measuredangle CEG = \measuredangle QEC - \measuredangle QEG = \left(180^\circ - \frac{m}{2}\right) - \left(\frac{180^\circ - n}{2}\right) = 90^\circ - \frac{m}{2} + \frac{n}{2}$$

$$\measuredangle QGC = \measuredangle QGE + \measuredangle EGC = 90^\circ$$

$$\frac{180^\circ - n}{2} + 180^\circ - 2\left(90^\circ - \frac{m}{2} + \frac{n}{2}\right) = 90^\circ$$

$m = \frac{3 \cdot n}{2}$ and $n = \frac{2 \cdot m}{3}$

$\measuredangle EQG = \frac{2}{3} \cdot \measuredangle EQJ$ and $\measuredangle EQF = \frac{2}{3} \cdot \measuredangle EQH$

Adding the last two, $\measuredangle FQG = \frac{2}{3} \cdot \measuredangle HQJ = 120^\circ$

$$FQ = GQ = HQ = QJ = \left(\frac{379.935}{2}\right) \cdot \frac{1}{\cos 30^\circ} = 219.356$$

And HJ = 438.712'