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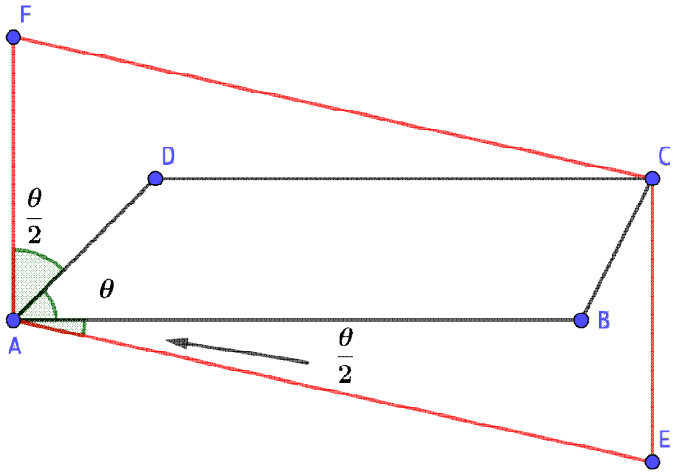
$ABCD$, $AECF$ –paralellograms, $AB = 2 \cdot AD$,

$$\widehat{BAD} = 2\widehat{BAE} = 2\widehat{DAF} = \widehat{\theta} < 90°, \frac{[AECF]}{[ABCD]} = \frac{10}{3}$$

Find: $\widehat{\theta}$



Proposed by Thanasis Gakopoulos-Larisa-Greece

Solution by proposer

$$AB = a, BD = b. \text{ Is } \frac{a}{b} + \frac{b}{a} = \frac{5}{2}$$

$$\text{Is } \frac{[AECF]}{[ABCD]} = \frac{\left(\frac{a}{b}+\frac{b}{a}\right)\sin\frac{\theta}{2}\cdot\sin\frac{3\theta}{2}+\sin^2\frac{\theta}{2}+\sin^2\frac{3\theta}{2}}{\sin\theta\cdot\sin(2\theta)} = \frac{10}{3} \rightarrow \theta = 60°$$