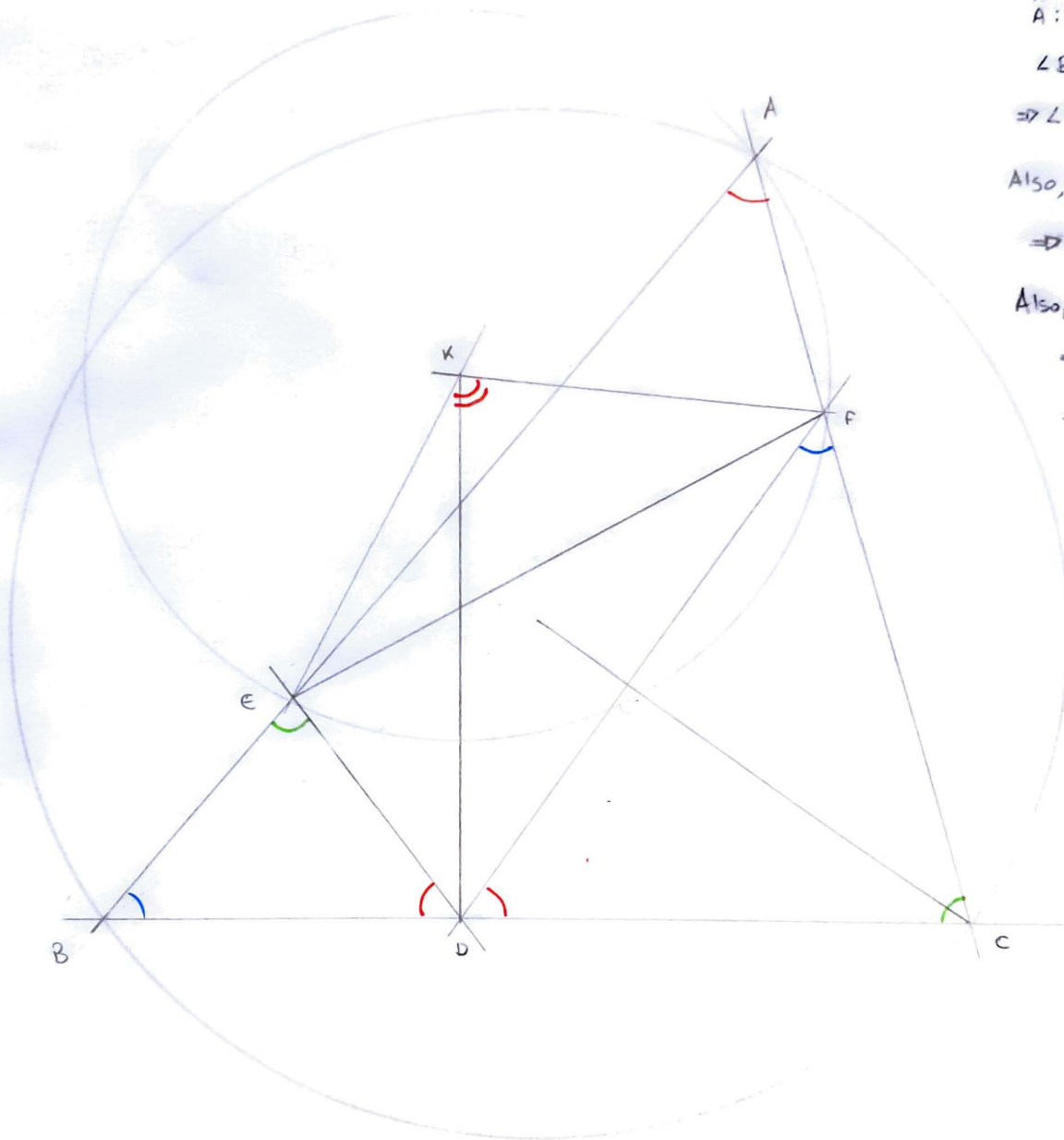


(EGMO 2012)



$$\hat{A} := \angle BAC \Rightarrow$$

$$\angle BOC = 2\hat{A} \Rightarrow \angle OCB = \angle OBC = 90^\circ - \hat{A}$$

$$\Rightarrow \angle FDC = \hat{A}, \text{ Analog, } \angle EDB = \hat{A} \Rightarrow \angle EDF = 180^\circ - 2\hat{A}$$

$$\text{Also, } \hat{A} = \angle EAF \Rightarrow \angle EKF = 2\hat{A}$$

$$\Rightarrow \circ(K, D, E, F)$$

$$\text{Also, } \angle EKF = 2\hat{A} \Rightarrow \angle KEF = 90^\circ - \hat{A} \Rightarrow$$

$$\Rightarrow \angle KDF = 90^\circ - \hat{A} \Rightarrow$$

$$\Rightarrow \angle KDC = \angle KDF + \angle FDC = 90^\circ$$

□