



**Example 45 :** As shown in the figure, the diagonals of parallelogram  $ABCD$  intersect at  $O$ ,  $AP$  is the angle bisector of  $\triangle DAB$ ,  $PK \parallel DA$ , to prove:  $DK \perp PA$ .

Proof: Let  $O=0$  ,  $P=sD$  ,  $K=sA$  ,  $\frac{A-P}{A+D}=t_1$  ,  $\left(\frac{D-K}{A-P}\right)^2=T$  , then

$$T=1-t_1+s^2t_1.$$