



Example 53 : As shown in the figure, the trapezoid $ABCD$, $AB \parallel CD$, $AB > CD$, K and M are the points on the waist AD and CB respectively, and it is known that $\angle DAM = \angle CBK$, to prove: $\angle DMA = \angle CKB$. (Second Session "Zu Chong's Cup" Junior High School Mathematics Invitational Test Questions)

Proof: Let the intersection of $O = AD$ and BC , $D = sA$, $C = sB$, $K = kA$, $M = mB$, solve the equation

$$k_1 \frac{\frac{K-C}{M-A}}{\frac{M-D}{B-C}} + k_2 \frac{\frac{A-0}{B-K}}{\frac{A-0}{B-C}} = k_3, \text{ available } \frac{\frac{K-C}{M-A}}{\frac{M-D}{B-C}} - (km-s) \frac{\frac{A-0}{B-K}}{\frac{A-0}{B-C}} = s.$$

Explanation: It is necessary to pay attention to this way of setting the origin, which will make the conclusion easier.