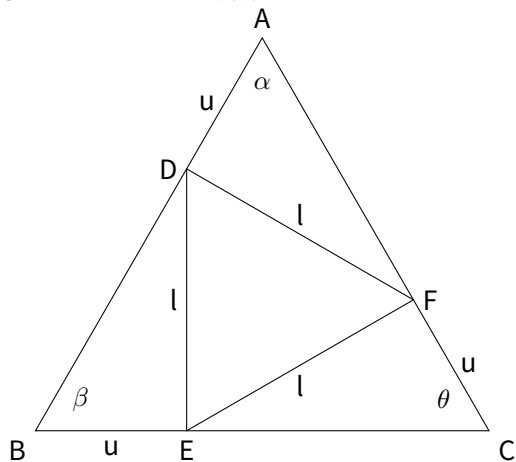


$\triangle DEF$  为正三角形  $AD=BE=CF$   
 求证  $\triangle ABC$  为正三角形



假设  $\angle\alpha < \angle\theta$

$\angle\alpha > \angle\theta$

$$\therefore \cos \alpha = \frac{u^2 + |AF|^2 - l^2}{2u|AF|} = \frac{u^2 + x^2 - l^2}{2ux}$$

$$\therefore (\cos \alpha)' = \left( \frac{(u^2 - l^2)}{2u} \frac{1}{x} + \frac{x}{2u} \right)' = \frac{(l^2 - u^2)}{2u} \frac{1}{x^2} + \frac{1}{2u}$$

如果  $l > u$ , 随着  $\alpha$  增大  $|AF|$  减小

$\angle\alpha < \angle\theta$

$$\Rightarrow |AF| < |CE|$$

$$\Rightarrow |AC| < |BC|$$

$$\Rightarrow \angle\beta < \angle\alpha$$

$$\Rightarrow |BD| > |AF|$$

$$\Rightarrow |AB| > |AC|$$

$$\Rightarrow \angle\theta > \angle\beta$$

$$\Rightarrow |CE| < |BD|$$

$$\Rightarrow |BC| < |AB|$$

$$\Rightarrow \angle\alpha > \angle\theta$$