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$$\left|\frac{z+i}{z-3i}\right| = 1$$

~~we have~~ α — point of plane which satisfy.

$$|z+i| = |z-3i|$$

suppose $z = x+iy$
Here (x,y) are points of the plane which satisfy the equation.

$$|x+iy+i| = |x+iy-3i|$$

$$\Rightarrow |x+i(y+1)| = |x+i(y-3)|$$

$(\because |z| = \sqrt{z\bar{z}}$

if $z = a+ib$ then $\bar{z} = a-ib)$

So that

$$\sqrt{\{x+i(y+1)\}\{x-i(y+1)\}} = \sqrt{\{x+i(y-3)\}\{x-i(y-3)\}}$$

$$\Rightarrow \sqrt{x^2+(y+1)^2} = \sqrt{x^2+(y-3)^2}$$

$$\Rightarrow x^2+(y+1)^2 = x^2+(y-3)^2$$

$$\Rightarrow y^2+2y+1 = y^2+9-6y$$

$\Rightarrow \quad 8y = 8$

$\Rightarrow \quad y = 1$

So $y = 1$ & $x \in R$

Here points of the plane which satisfy the equation are all point on the line $y = 1$.