

Through a point not on a given plane there is only one plane parallel to a given plane.

주어진 평면 위에 있지 않은 점을 지나 주어진 평면에 평행한 평면은 단 하나 존재한다.

(Through a point not on a given plane there is only one plane parallel to a given plane.)

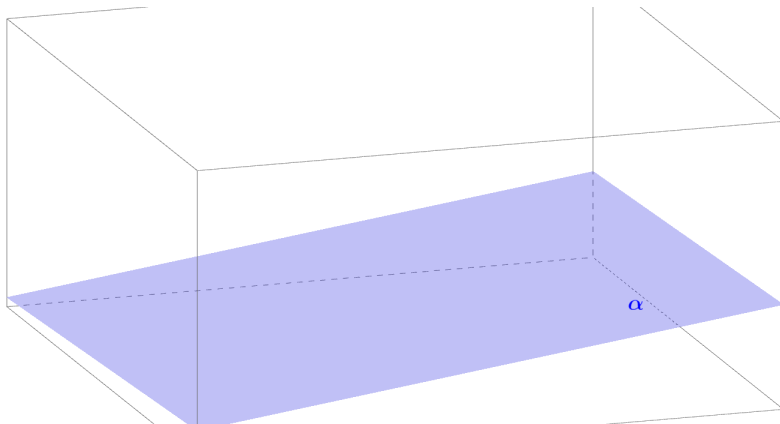
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▶ Start

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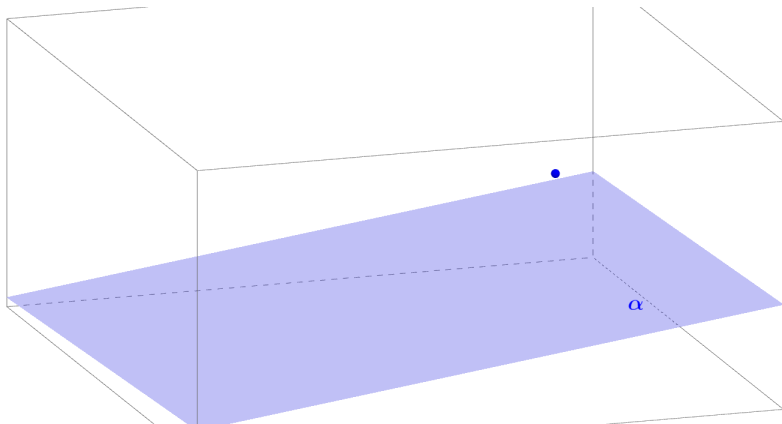
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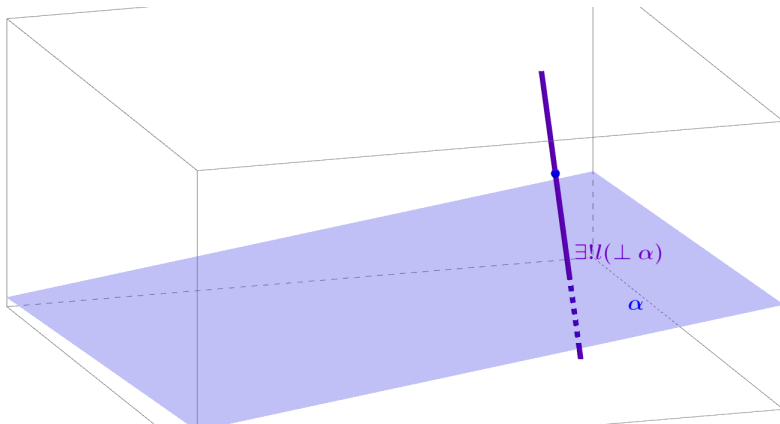
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▶ Start

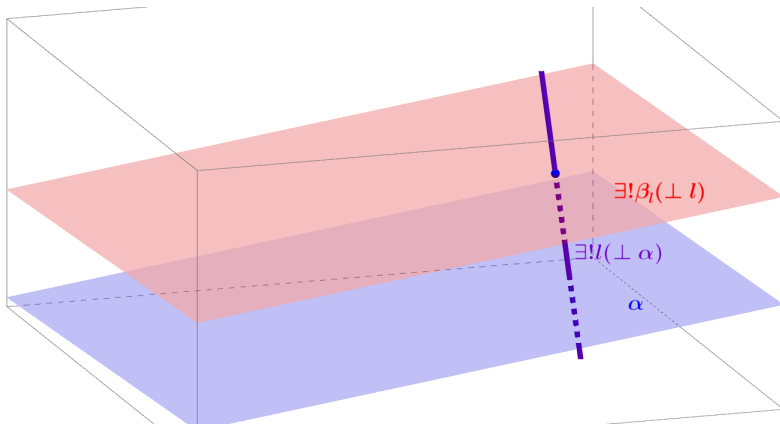
▶ End



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▶ Start

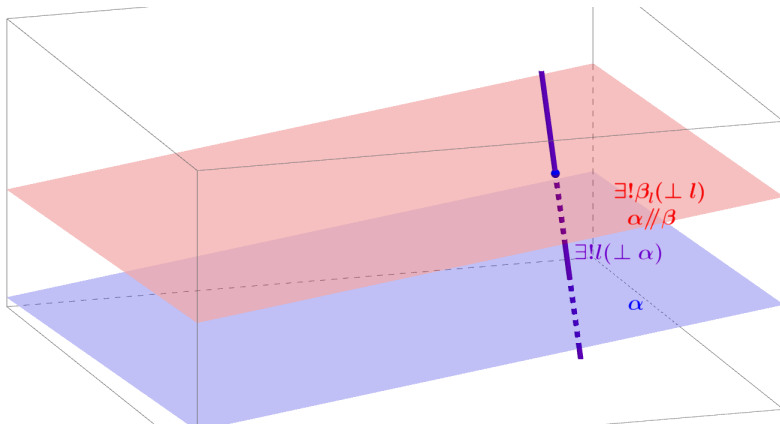
▶ End



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▶ Start

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▶ End

단약 평면 α 위에 있지 않은 점 P 을 지나면서 α 에 평행한 서로 다른 두 평면 β_1, β_2 가 있다면, β_1 에는 속하고 β_2 에는 속하지 않는 점 P_1 이 존재한다. 직선 PP_1 포함하며 α 와 만나는 평면 γ 를 생각할 수 있다. γ 와 α 가 만나므로 교선 l 이 있고 γ 를 기준으로 보았을 때 l 과 직선 PP_1 는 평행하다. 또한 P 는 β_2 에도 속하므로 β_2 과 γ 의 교선은 γ 를 기준으로 보았을 때 l 과 평행하므로 직선 PP_1 과 같다. 이는 P_2 가 β_2 에 속한다는 의미이므로 모순이다.

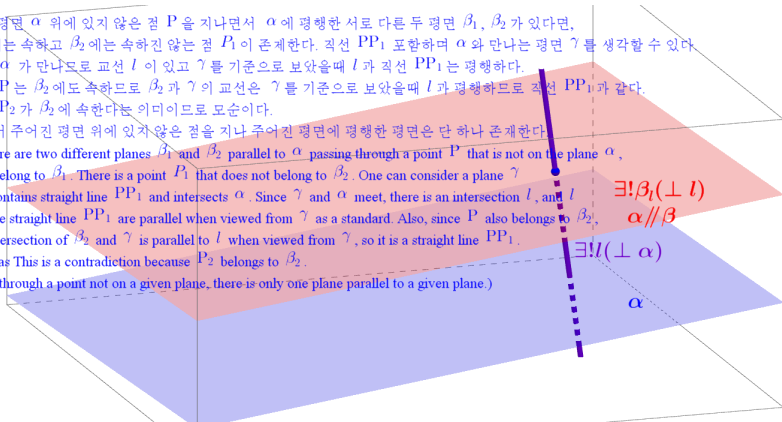
따라서 주어진 평면 위에 있지 않은 점을 지나 주어진 평면에 평행한 평면은 단 하나 존재한다.

(If there are two different planes β_1 and β_2 parallel to α passing through a point P that is not on the plane α , they belong to β_1 . There is a point P_1 that does not belong to β_2 . One can consider a plane γ

that contains straight line PP_1 and intersects α . Since γ and α meet, there is an intersection l , and l and the straight line PP_1 are parallel when viewed from γ as a standard. Also, since P also belongs to β_2 , the intersection of β_2 and γ is parallel to l when viewed from γ , so it is a straight line PP_1 .

Same as This is a contradiction because P_2 belongs to β_2 .

Thus, through a point not on a given plane, there is only one plane parallel to a given plane.)



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Github:

<https://min7014.github.io/math20230325001.html>

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and you can see a picture moving.