

There is only one plane that passes through a point and is perpendicular to a straight line.

한 점을 지나고 한 직선에 수직인 평면은 단 하나뿐이다.

(There is only one plane that passes through a point and is perpendicular to a straight line.)

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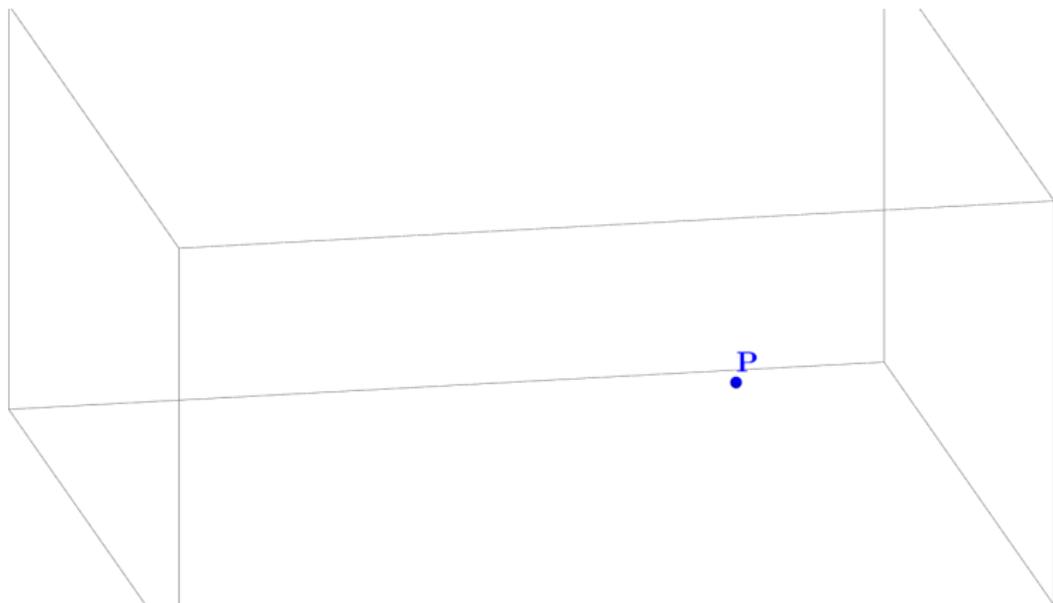
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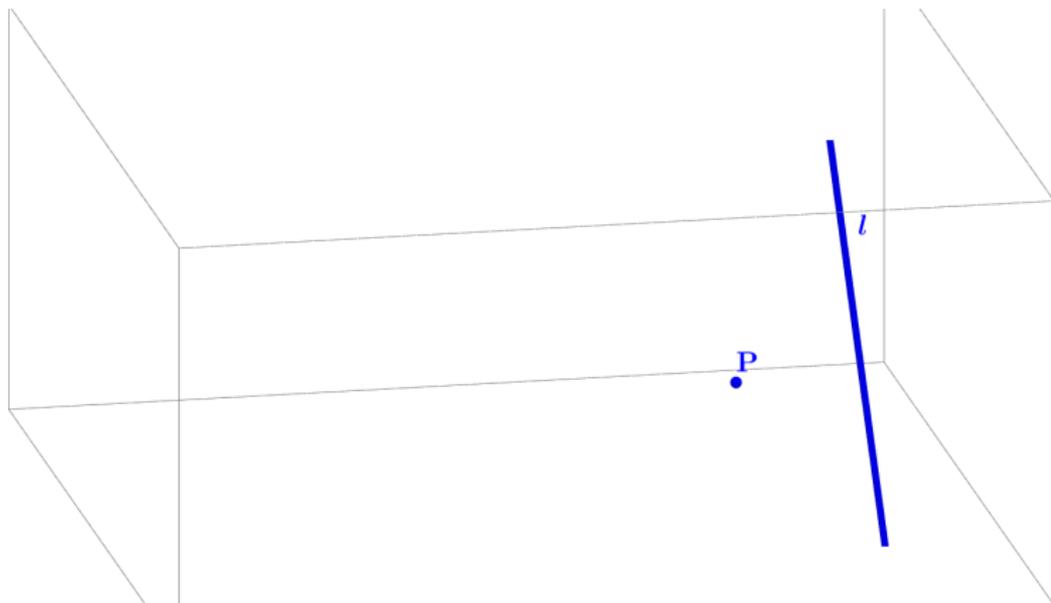
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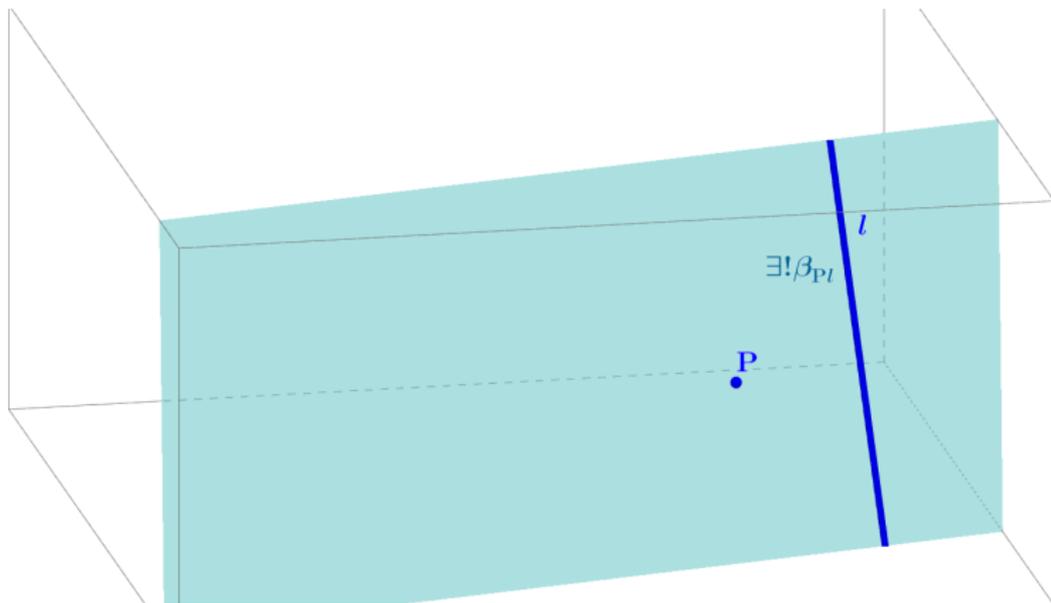
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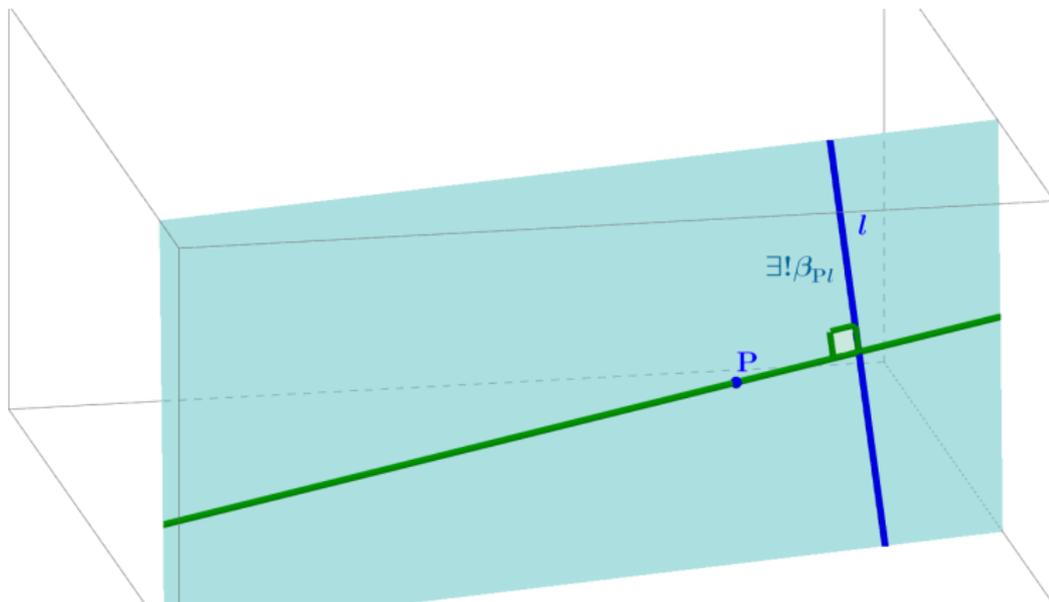
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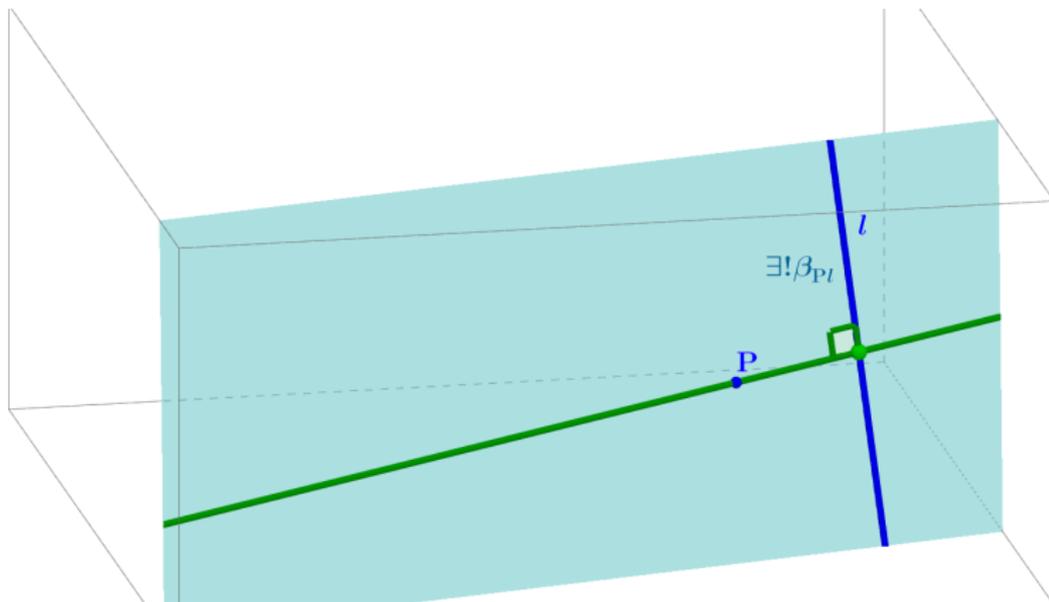
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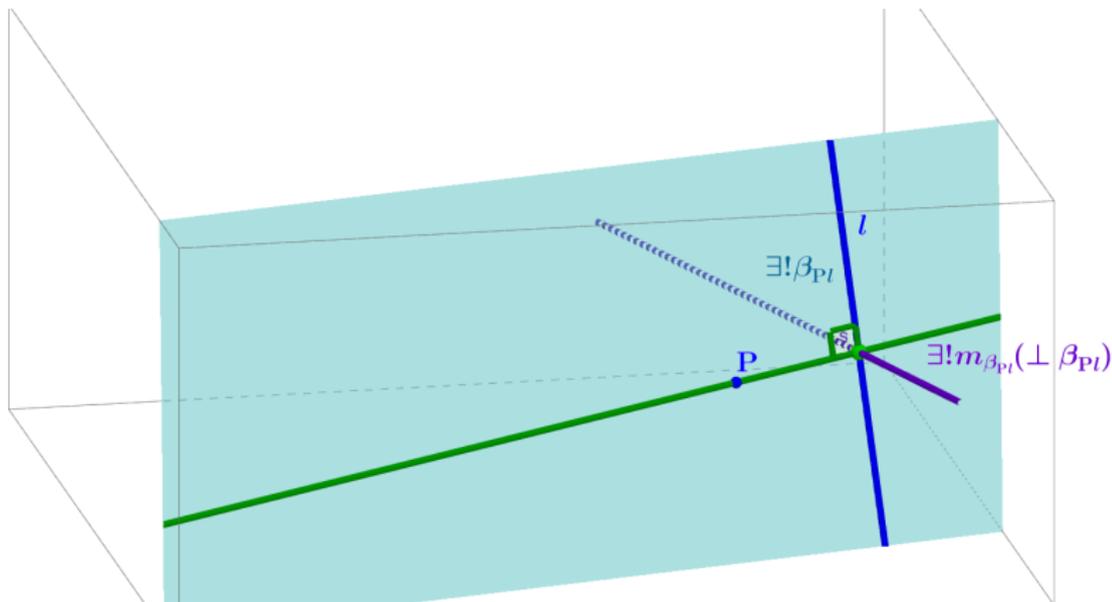
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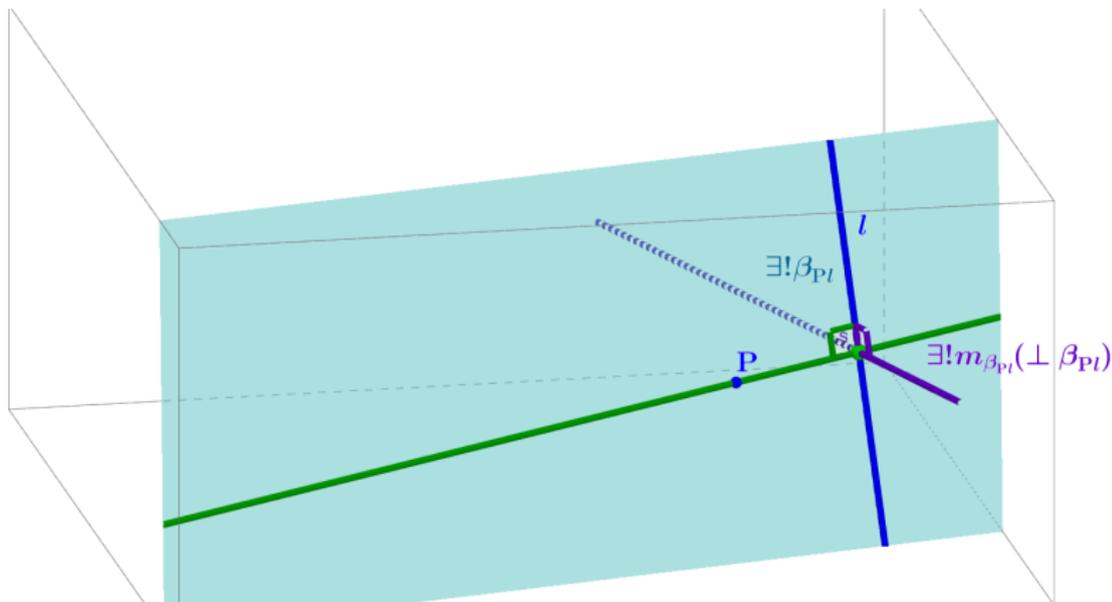
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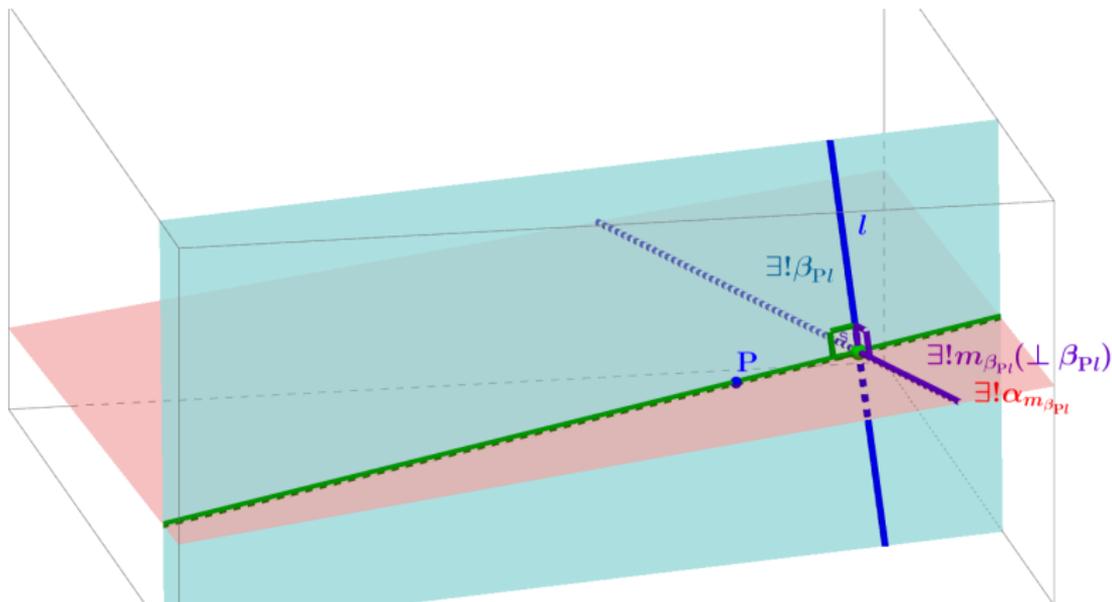
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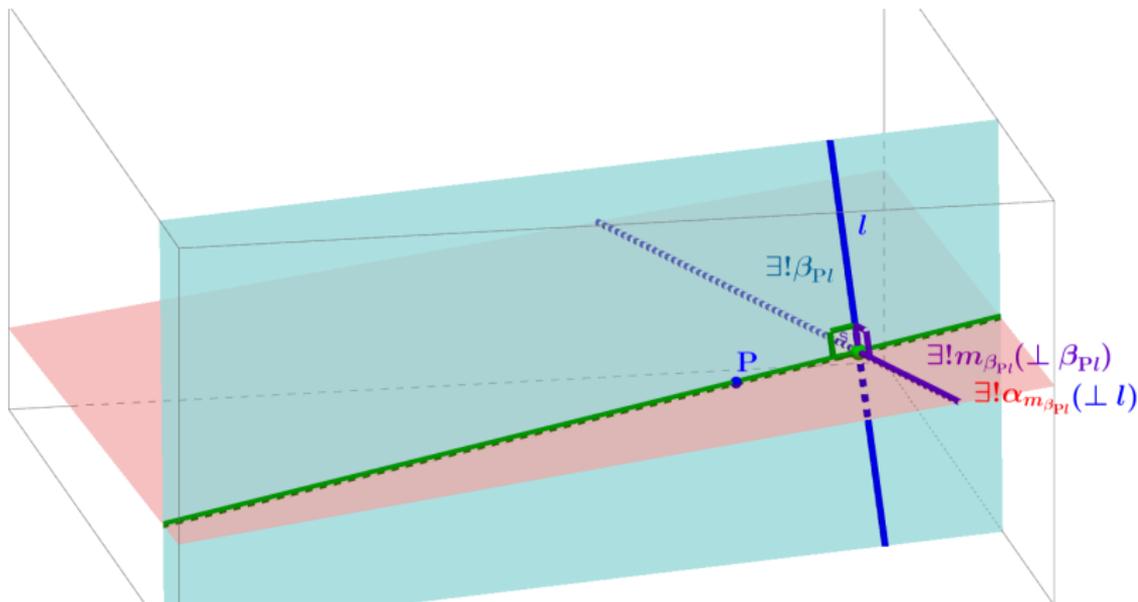
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한 점 P 를 지나고 한 직선 l 에 수직인 서로 평면 α_1, α_2 가 있다고 하자.

두 평면 평면 α_1, α_2 가 다르다면, 평면 α_1 에는 속하지만 α_2 에는 속하지 않는 점 P_1 이 존재한다.

점 P_1 을 지나면서 직선 l 에 평행한 직선 l_1 은 평면 α_2 와도 수직이므로 수선의 발 P_2 가 존재한다.

각 PP_1P_2 와 각 PP_2P_1 이 수직이므로 서로 다른 세 점 P, P_1, P_2 가 만드는 삼각형은 존재할 수 없다.

따라서 두 평면 α_1 과 α_2 는 같다.

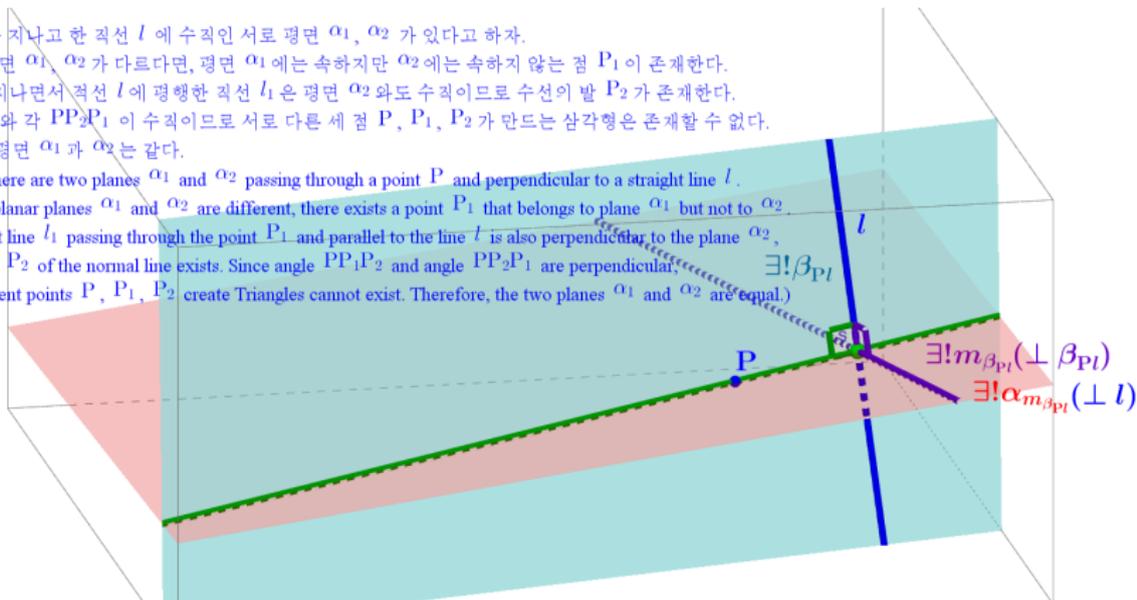
(Suppose there are two planes α_1 and α_2 passing through a point P and perpendicular to a straight line l .

If the two planar planes α_1 and α_2 are different, there exists a point P_1 that belongs to plane α_1 but not to α_2

The straight line l_1 passing through the point P_1 and parallel to the line l is also perpendicular to the plane α_2 ,

so the foot P_2 of the normal line exists. Since angle PP_1P_2 and angle PP_2P_1 are perpendicular,

three different points P, P_1, P_2 create Triangles cannot exist. Therefore, the two planes α_1 and α_2 are equal.)



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Github:

<https://min7014.github.io/math20230312001.html>

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and you can see a picture moving.