

Answer on Question #54854 – Math – Geometry

Theorem 3-9 states that in a plane, two lines perpendicular to the same line are parallel. Explain why the phrase "in a plane" is needed.

Solution

If we take the rectangular solid, $LK \perp KN$, $MN \perp KN$, besides LK , KN , MN lie in the same plane (upper face $KLMN$), then $LK \parallel MN$.

If we take $LK \perp KN$, $AK \perp KN$, besides LK , KN , AK lie in space, not on the plane, then we cannot say that LK is parallel to AK , because LK and AK intersect at point K .

