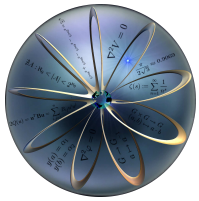

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parallel and perpendicular planes

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Theorem 1. If a plane (π) intersects two parallel planes (ϱ, σ), the intersection lines are parallel.

Proof. The intersection lines cannot have common points, because ϱ and σ have no such ones. Since the lines are in a same plane π, they are parallel.

Theorem 2. If a plane (π) contains the `http://planetmath.org/PlaneNormal`normal (n) of another plane (ϱ), the planes are `http://planetmath.org/DihedralAngle`perpendicular to each other.

Proof. Draw in the plane ϱ the line l cutting the intersection line perpendicularly and cutting also n. Then l must be perpendicular to n and thus to the whole plane π (see the Theorem in the entry normal of plane). Consequently, the right angle formed by the lines n and l is the normal section of the dihedral angle formed by the planes π and ϱ. Therefore, $\pi \perp \varrho$.