

Extreme Problem 9

The diagram shows a triangular prism labelled as follows: $OL = AM = BN = 8$ units. The vertex O is taken to be the origin and the perpendicular unit vectors \mathbf{i} , \mathbf{j} and \mathbf{k} are defined with \mathbf{i} along \overrightarrow{OA} and \mathbf{k} upwards vertically along \overrightarrow{OL} . The faces OAB and LMN are equilateral triangles with side 4 units.

Find the Cartesian equation of the plane OMN .

