

## 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  $OMN$ .

