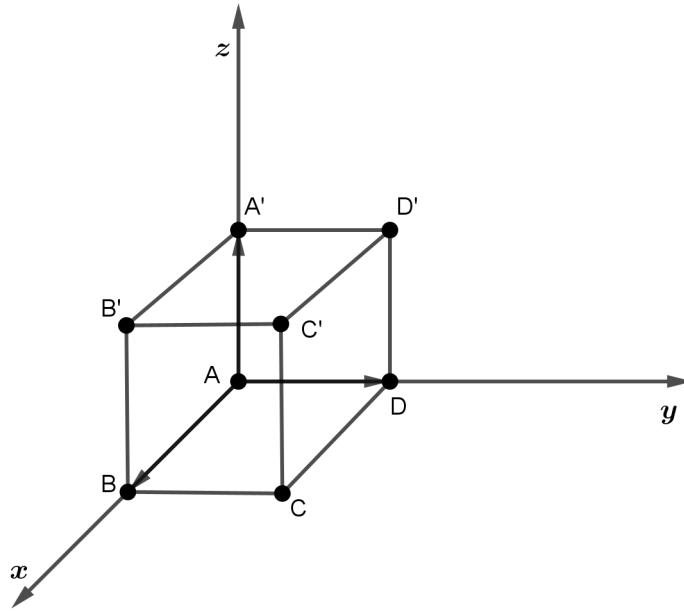


VOLUME OF THE CUBE

DANIEL SITARU - ROMANIA



$$\begin{aligned} & B(l, 0, 0); D(0, l, 0); A'(0, 0, l) \\ & \vec{AB} = l\vec{i}; \vec{AD} = l\vec{j}; \vec{AA'} = l\vec{k} \\ & \vec{AB} \times \vec{AD} = \begin{vmatrix} \vec{i} & \vec{j} & \vec{k} \\ l & 0 & 0 \\ 0 & l & 0 \end{vmatrix} = l^2\vec{k} \\ & \vec{AA'} = (0 - l)\vec{i} + 0\vec{j} + l\vec{k} \\ & \vec{AA'} \cdot (\vec{AB} + \vec{AD}) = \\ & = (0\vec{i} + 0\vec{j} + l^2\vec{k}) \cdot (-l\vec{i} + 0\vec{j} + l\vec{k}) = \\ & = 0 \cdot (-l) + 0 \cdot 0 + l^2 \cdot l = l^3 \\ & V[ABCD A' B' C' D'] = l^3 \end{aligned}$$

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