

Problem 3: Objects in Space

USMA D/Math Problem of the Week

Submission Deadline: 02 October, 2008 at 1600

Circle one: cadet faculty other

Problem Statement:

Consider any solid object in space, where each face is flat (a cube is an excellent example). For each face f_i associate a vector \vec{v}_i where \vec{v}_i points out of the object, perpendicular to the face, and the magnitude of each vector is the area of the associated face, $|\vec{v}_i| = A(f_i)$. What is $\sum_i \vec{v}_i$?