Subject: Re: Volume by four vectors
Posted by ed on Sun, 17 Oct 2004 14:35:45 GMT
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Sander,

Uhoh! It's a volume with 5 vertices, obviously not cube-like in any way. But I guess you can dissect it into irregular tetrahedrons and use that Francesca formula for each one. The volume of the original solid may not be convex in general, which might lead to negative tetrahedral volumes, but I suspect, even then the sum of the volumes will be correct.

Ed

Sander Roosendaal <sander@wereldraadsel.nl> wrote in message news:<kfn242-pe3.ln1@wereldraadsel.demon.nl>...
> Many thanks, Ed.
> Just the hint I needed.
>
> Ed Schmahl wrote:
>
>> Dear Sander,
>>
>> Interesting geometry problem. The volume you're talking about is an
>> irregular polyhedron--the generalization of a cube. You can dissect
>> the volume into
>> irregular tetrahedra, each bounded by 4 triangles, two triangles on
>> each face.
>> Pick an origin inside of the hexahedron, and since there are 6 faces,
>> there
>> will be 12 (irregular) tetrahedra, each with a common vertex at the
>> origin.
>> Obviously the location of the origin is irrelevant, but if it is
>> outside of
>> the hexahedron, some of the tetrahedra will have negative volumes.
>>