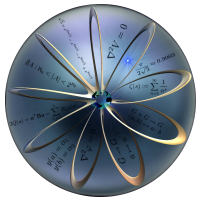

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scalar factor transfer rules

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The different kinds of products between two Euclidean vectors may an additional scalar as factor in either vector factor $\vec{u}$, $\vec{v}$. Then such a scalar r can be transferred from a vector to the other vector and to the whole product. This is true for scalar product,

$$\vec{u}\cdot(r\vec{v}) = (r\vec{u})\cdot\vec{v} = r(\vec{u}\cdot\vec{v}),$$

for vector product,

$$\vec{u}\times(r\vec{v}) = (r\vec{u})\times\vec{v} = r(\vec{u}\times\vec{v}),$$

and also for dyad product,

$$\vec{u}(r\vec{v}) = (r\vec{u})\vec{v} = r(\vec{u}\vec{v}).$$