

I make this document to feel what vector identities are. I'll describe usage and my individual thought - that means you can think it in different way and my idea could be wrong. If you have another meaning or find my fault, please let me know. I'll update your idea.
(I usually make a mistake. Please let me know~!!)

You can obtain "NRL Plasma Formulary" at following site :
http://wwwppd.nrl.navy.mil/nrlformulary/NRL_FORMULARY_06a.pdf
It's free :) There is Vector identities chapter.

$$(9) \nabla \cdot (\mathbf{A} \times \mathbf{B}) = \mathbf{B} \cdot (\nabla \times \mathbf{A}) - \mathbf{A} \cdot (\nabla \times \mathbf{B})$$

It was useful when I calculated contravariant component of $\nabla \times \mathbf{A}$ form. We can frequently meet that rotation form such as Ampere's law. If we think \mathbf{B} as ∇x^i to calculate $(\nabla \times \mathbf{A})^i$ component, the 2nd term of RHS is 0 due to $\nabla \times \nabla c = 0$ (c is any function).

EX) J^θ, J^ζ with flux representation - Plasma Confinement (p. 82)