Exercise 4

Use Eq. A.5-4 (with $\mathbf{v}$ replaced by $\boldsymbol{\tau}$) to show that, when $\tau_{ki} = \sum_j \varepsilon_{ijk} x_j$,

$$2 \int_S \mathbf{n}\, dS = \oint_C [\mathbf{r} \times \mathbf{t}]\, dC$$

where $\mathbf{r}$ is the position vector locating a point on C with respect to the origin.