Provide a clear and organized presentation. Given two vectors in  $R^3$ , prove that:

$$\left(\overline{a} \times \overline{b}\right) \times \overline{c} = \left(\overline{a} \cdot \overline{c}\right) \overline{b} - \left(\overline{b} \cdot \overline{c}\right) \overline{a}$$