

**13.6**      $\vec{a} \times (\vec{b} + \vec{c}) + \vec{b} \times (\vec{c} + \vec{a}) + \vec{c} \times (\vec{a} + \vec{b}) = \vec{a} \times \vec{b} + \vec{a} \times \vec{c} + \vec{b} \times \vec{c} + \vec{b} \times \vec{a} + \vec{c} \times \vec{a} + \vec{c} \times \vec{b} =$   
 $\vec{a} \times \vec{b} + \vec{b} \times \vec{a} + \vec{a} \times \vec{c} + \vec{c} \times \vec{a} + \vec{b} \times \vec{c} + \vec{c} \times \vec{b} =$   
 $\vec{a} \times \vec{b} - \vec{a} \times \vec{b} + \vec{a} \times \vec{c} - \vec{a} \times \vec{c} + \vec{b} \times \vec{c} - \vec{b} \times \vec{c} = \vec{0} + \vec{0} + \vec{0} = \vec{0}$