

$$a_i(b \wedge c) + b_i(c \wedge a) + c_i(a \wedge b)$$

$$= \begin{vmatrix} a_i & b_i & c_i \\ a_1 & b_1 & c_1 \\ a_2 & b_2 & c_2 \end{vmatrix}$$

$$= 0 \text{ for } i = 1, 2.$$