

$$[A, [B, C]] = [A, BC - CB] \Rightarrow ABC =$$

Cyclic

$$\left\{ \begin{aligned} [A, [B, C]] &= ABC - BCA - ACB + CBA \\ [B, [C, A]] &= BCA - CAB - BAC + ACB \\ [C, [A, B]] &= CAB - ABC - CBA + BAC \end{aligned} \right.$$

All terms cancel in pairs when added.