

In[24]:= **VAcBarc[a1, b1, p, a2, b2, mu2, a3, b3] // FullSimplify**

$$\text{Out[24]= } \frac{1}{4} g \bar{p}^{\mu_2} \left(\bar{g}^{a_1 b_3} \left(\bar{g}^{a_2 a_3} \bar{g}^{b_1 b_2} - \bar{g}^{a_2 b_1} \bar{g}^{a_3 b_2} \right) + \right. \\ \left. \bar{g}^{a_1 b_2} \left(\bar{g}^{a_2 b_3} \bar{g}^{a_3 b_1} - \bar{g}^{a_2 a_3} \bar{g}^{b_1 b_3} \right) + \bar{g}^{a_1 a_3} \left(\bar{g}^{a_2 b_1} \bar{g}^{b_2 b_3} - \bar{g}^{a_2 b_3} \bar{g}^{b_1 b_2} \right) + \bar{g}^{a_1 a_2} \left(\bar{g}^{a_3 b_2} \bar{g}^{b_1 b_3} - \bar{g}^{a_3 b_1} \bar{g}^{b_2 b_3} \right) \right)$$