

$$\mathcal{R}_{\text{offset};3}^{(2)} = 2 \left[ \text{Li}_3(u) + \text{Li}_3(1-u) \right] - \frac{1}{2} \log^2(u) \log \frac{vw}{(1-u)^2} + \frac{2}{3} \log(u) \log(v) \log(w) \\ + \frac{2}{3} \zeta_3 + 2 \zeta_2 \log(-q^2) + \text{perms}(u, v, w)$$