$$|R'_k| \le A \frac{2^k}{B_1^{n-1}} \left(\frac{\Gamma(n - \frac{1}{2})}{m!} \right)^{1/2} \left\{ \frac{\sqrt{m+1}}{4} |\eta_5| + \frac{\sqrt{(m-1)(m-2)}}{4\sqrt{m}} |\eta_5| + \frac{|1 - 2\sigma|}{4\sqrt{m}} |\eta_6| \right\}.$$