1032-42-207 **George C. Stey*** (gcstey@windstream.net), Mathematics Building, 121A, 231 West 18th Ave, Columbus, OH 43210. *Behavior of the Norm of N-Fold Convolutions.*

Define $g_1(x) = g(x)$, $g_{n+1}(x) = \int_{-\infty}^{\infty} g(x-y)g_n(y)dy, n = 1,2,3,....$Under four assumptions on g(x) and its Fourier transform,$\hat{g}(t)$, which imply that there be only one point,t_0, at which $|\hat{g}(t_0)| = sup_{s\epsilon\mathbb{R}}|\hat{g}(s)|$ and that $0 < Re(K_2)$, where $K_j = (-id/dt)^j ln(\hat{g}(t))|_{t=t_0}$,it has been shown(G.C. Stey,dissertation,Ohio State U.,2007)that $\| g_n \|_{L^1} = |\hat{g}(t_0)|^n \{\Sigma_{\ell=0}^{L} c_\ell (\frac{1}{n})^\ell + o((\frac{1}{n})^L)\}$ as $n \to \infty$,$(L = 1,2,3,...)$,

where $c_\ell = \frac{1}{\sqrt{2\pi|K_2|}} \int_{-\infty}^{\infty} e^{\{-w^2 Re(\frac{1}{2K_2})\}} S_{2\ell}(w)dw$, where $S_0(w) = 1 = Q_0(w)$,

$S_r(w) = \Sigma_{m=1}^{r} m! \binom{1/2}{m} \Sigma'_{(m_1,m_2,...,m_r),m} \Pi_{j=1}^{r} [\Sigma_{j_1=0}^{j} Q_{j-j_1}(w) \bar{Q}_{j_1}(w)]^{m_j}/m_j!$,with

$Q_r(w) = \Sigma_{m=1}^{r} He_{2m+r}(\frac{-w}{\sqrt{K_2}}) \Sigma'_{(m_1,m_2,...,m_r),m} \Pi_{j=1}^{r} \{(\frac{1}{\sqrt{K_2}})^{2+j} \frac{K_{2+j}}{(2+j)!}\}^{m_j}/m_j!$ $(r = 1,2,3,...)$, $He_k(u) = \exp(u^2/2)(-d/du)^k \exp(-u^2/2)$,and Σ' indicates $\Sigma_{j=1}^{r} m_j = m$ and $\Sigma_{j=1}^{r} j\, m_j = r$,with nonnegative integers m_j. (Received August 22, 2007)