where $I_{\nu-1}$ is the modified Bessel function of index $\nu-1$.

(c) If $f(1) = 0$ and $f(\omega)/\omega^{n+1} \to 0$ as $\omega \to \infty$, then

$$\int_1^\infty \frac{d\omega}{\omega^{n+2}}\, \omega^{-\alpha+1} \frac{d}{d\omega} \omega^\alpha f(\omega) = (n+\alpha+1) \int_1^\infty \frac{d\omega}{\omega^{n+2}} f(\omega).$$

The moment problem that we encounter is

$$F_n(q^2) = F_n(q_0^2)\, \lambda^{-a_n}, \tag{A.1}$$

where, with the approximations that have been adopted, a_n has the form

$$a_n = \text{constant} + \sum_\beta \left(c_\beta \log(n+\alpha_\beta+1) + \frac{d_\beta}{n+\alpha_\beta+1} \right). \tag{A.2}$$

Our coefficients d_β are positive. If all the c_β were similarly positive we could invert λ^{-a_n} by repeated convolutions, using (a) and (b). One further convolution would then yield $F(\omega, q^2)$. Actually, the c_β are not all positive. However, if a given c_β is negative we can use (c) to write

$$F_n(q_0^2) = \frac{1}{n+\alpha_\beta+1}\, G_n(q_0^2; \alpha_\beta) \tag{A.3}$$