Products and compositions with the Dirac delta function

Corrigendum

Products and compositions with the Dirac delta function
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Equation (2.43) should read

$$f \cdot \delta^{(k)} \overset{\pm}{=} (-1)^k \sum_{i=0}^{k} (-1)^i \binom{k}{i} f^{(k-i)}(0)\delta^{(i)}$$

so that (2.44) reads

$$x^{-n} \cdot \delta^{(k)} \overset{\pm}{=} \sum_{i=0}^{k} \binom{k}{i} \frac{(n+k-1-i)!}{(n-1)!} x_\omega^{-n-k+i}(0)\delta^{(i)}.$$

Also, (2.16) and (2.29) should respectively read

$$f(\delta\delta') \overset{\pm}{=} -[f(0)\delta'_\omega(0)+f'(0)\delta_\omega(0)]\delta + f(0)\delta_\omega(0)\delta'$$

$$PV \int \frac{g(x)}{x}\,\mathrm{d}x = \lim_{\varepsilon \to 0} \int_{|x|>\varepsilon} \frac{g(x)}{x}\,\mathrm{d}x.$$

In the last of (3.17), the exponent of z_+ should be $(i - 2mr - 2m - r)/(2m + 1)$.