Note sure what I was getting at here.

$C_k(n,x)$ is what I later notate as $[(x^{1-(0)}\cdot\zeta(0,1+x^{-1}))^k]_n$ The x parameter is sort of a smoothing / sampling scale factor. It's useful for expressing the difference between the logarithmic integral and the riemann prime counting function

$D_k'(n)$ here is what I later notate as $[(x-1)^k]_n$, of course.

$$C_1(n,x)=x^{-1}\left(\binom{1}{1}\sum_{j=2}^{\lfloor nx\rfloor}1-\binom{1}{0}\sum_{j=2}^{\lfloor x\rfloor}1\right)$$

$$C_2(n,x)=x^{-2}\left(\binom{2}{2}\sum_{j=2}^{\lfloor nx^2\rfloor}\sum_{k=2}^{\lfloor \frac{nx^2}{j}\rfloor}1-\binom{2}{1}\sum_{j=2}^{\lfloor x\rfloor}\sum_{k=2}^{\lfloor \frac{nx^2}{j}\rfloor}1+\binom{2}{0}\sum_{j=2}^{\lfloor x\rfloor}\sum_{k=2}^{\lfloor x\rfloor}1\right)$$

$$C_3(n,x)=x^{-3}\left(\binom{3}{3}\sum_{j=2}^{\lfloor nx^3\rfloor}\sum_{k=2}^{\lfloor \frac{nx^3}{j}\rfloor}\sum_{m=2}^{\lfloor \frac{nx^3}{jk}\rfloor}1-\binom{3}{2}\sum_{j=2}^{\lfloor x\rfloor}\sum_{k=2}^{\lfloor \frac{nx^3}{j}\rfloor}\sum_{m=2}^{\lfloor \frac{nx^3}{jk}\rfloor}1+\binom{3}{1}\sum_{j=2}^{\lfloor x\rfloor}\sum_{k=2}^{\lfloor x\rfloor}\sum_{m=2}^{\lfloor \frac{nx^3}{jk}\rfloor}1-\binom{3}{0}\sum_{j=2}^{\lfloor x\rfloor}\sum_{k=2}^{\lfloor x\rfloor}\sum_{m=2}^{\lfloor x\rfloor}1\right)$$

$$C_1(n,x)=x^{-1}\left(\binom{1}{1}D_1'(nx)-\binom{1}{0}\sum_{j=2}^{\lfloor x\rfloor}D_0'\left(\frac{nx}{j}\right)\right)$$

$$C_2(n,x)=x^{-2}\left(\binom{2}{2}D_2'(nx^2)-\binom{2}{1}\sum_{j=2}^{\lfloor x\rfloor}D_1'\left(\frac{nx^2}{j}\right)+\binom{2}{0}\sum_{j=2}^{\lfloor x\rfloor}\sum_{k=2}^{\lfloor x\rfloor}D_0'\left(\frac{nx^2}{jk}\right)\right)$$

$$C_3(n,x)=x^{-3}\left(\binom{3}{3}D_3'(nx^3)-\binom{3}{2}\sum_{j=2}^{\lfloor x\rfloor}D_2'\left(\frac{nx^3}{j}\right)+\binom{3}{1}\sum_{j=2}^{\lfloor x\rfloor}\sum_{k=2}^{\lfloor x\rfloor}D_1'\left(\frac{nx^3}{jk}\right)-\binom{3}{0}\sum_{j=2}^{\lfloor x\rfloor}\sum_{k=2}^{\lfloor x\rfloor}\sum_{m=2}^{\lfloor x\rfloor}D_0'\left(\frac{nx^3}{jkm}\right)\right)$$