Let $f$ be a holomorphic function on $A = \{z : r < |z| < R\}$. Avoiding the use of the Cauchy integral formula and contour integrals, but adding the hypothesis that the derivative of $f$ is bounded on $A$, the author obtains the Laurent series expansion of $f$ on $A$. Lebesgue’s dominated convergence theorem is used twice in the proof. Its first use is to obtain a formula for $f(z)$ as a limit of integrals, while its second application shows that the coefficients are independent of $\rho$ in $(r, R)$. The paper concludes with a sketch of how to use Goursat’s theorem to relax the hypothesis of local boundedness of the derivative.

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