$$\sigma_0 \leqq \limsup_{n\to\infty} (2 \log n)/\nu_n.$$

In order that $\sigma_0 \leqq 0$, in which case (3.1) will converge in the right half of the s-plane, it is sufficient that ν_n tend to infinity faster than $\log n$. The argument used to complete the proof of Theorem 2 is the same as the one used above in connection with Theorem 1.

Notice that if $\{\nu_{n+1}-\nu_n\}$ is not a null sequence, then ν_n tends to infinity faster than $\log n$. This eliminates the extra restriction used in the proof of Theorem 1.

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ON CERTAIN IDEALS OF DIFFERENTIAL POLYNOMIALS*

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Introduction. Let Σ be an ideal of differential polynomials in the unknowns $y_1, \cdots, y_n$. If the manifold of Σ is composed of s manifolds $\mathfrak{M}_1, \cdots, \mathfrak{M}_s$ not necessarily irreducible, none of which has a solution in common with any other, Σ has a unique representation as the product of s ideals $\Sigma_1, \cdots, \Sigma_s$ whose manifolds are, respectively, the $\mathfrak{M}_i$.†

Most of the present note is concerned with decompositions of the foregoing type and considers the case in which one of the $\mathfrak{M}_i$, say $\mathfrak{M}_1$, is composed of a single solution, that is, of a set of functions $\bar{y}_1, \cdots, \bar{y}_n$ contained in the underlying field. We shall examine, for this special case, the structure of the ideal Σ_1. Details will be given only for the case of a single unknown; the extensions to several unknowns are too obvious to require explicit mention. It will suffice, furthermore, to treat the case in which $\mathfrak{M}_1$ is composed of the solution $y=0$.

In §9, we consider a problem closely related to the theorem of decomposition stated above.

1. **On the structure of** Σ_1. Let Σ be an ideal of forms in the unknown y. Let $y=0$ be an essential irreducible manifold for Σ. Let Σ be the product of Σ_1 and Σ_2 where Σ_1 has $y=0$ as its manifold and Σ_2 does not admit $y=0$ as a solution. Let p be a positive integer such that y^p is contained in Σ_1.

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* Presented to the Society, September 8, 1939.

† Proceedings of the National Academy of Sciences, vol. 25 (1939), p. 90. *Product* is defined in the expected way. That the intersection of the Σ_i is identical with their product follows immediately from the fact that the Σ_i, considered as *algebraic* ideals, are *paarweise teilerfremd.* See van der Waerden, *Moderne Algebra*, vol. 2, p. 46.