tion of this lemma to the case where the coefficients of the system (5) and the initial data (6) depend on a parameter. The interval (0, 1) of course can be replaced by an arbitrary interval (a, b), the initial values $\mathfrak{y}'(0)$, $\mathfrak{y}''(0)$ may be made distinct and the whole theory can be extended to systems of infinitely many equations, under suitable restrictions upon the matrices and vectors involved.

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ON THE NUMBER OF APPARENT MULTIPLE POINTS OF VARIETIES IN HYPERSPACE

BY B. C. WONG

By an apparent point of multiplicity s on a variety in r-space we mean a line which passes through a given point in r-space and meets the variety in s distinct points. In order that the number of such apparent s-fold points on a variety V_x^m of order m and of x dimensions be finite, we must have $r=st+1$, $x=(s-1)t$, where t is the number less one of the hypersurfaces intersecting in the variety. In other words, the number of apparent s-fold points on a $V_{(s-1)t}^m$ which is the intersection of $t+1$ hypersurfaces in S_{st+1} is finite. It is the purpose of this paper to determine this number and also to determine its upper and lower limits.

We shall use the symbols $H_s^{(r)}$, $\bar{h}_s^{(r)}$ to denote respectively the maximum and minimum number of apparent s-fold points that a $V_{(s-1)t}^m$ of any order m in $S_r[r=st+1]$ can have, and the symbol $h_s^{(r)}$ to denote the number of those that a $V_{(s-1)t}^m$ of order $m=n_1n_2\cdots n_{t+1}$, which is the complete intersection of $t+1$ hypersurfaces of orders $n_1, n_2, \cdots, n_{t+1}$ respectively, ordinarily has. Thus if $s=2$, $t=1$ and therefore $r=3$, a curve C^m in S_3 can have at most

$$H_2^{(3)} = (m-1)(m-2)/2\,, \tag{1}$$

and at least

$$\bar{h}_2^{(3)} = m(m-2)/4, \qquad \text{for } m \text{ even}, \tag{2}$$

and

$$\bar{h}_2^{(3)} = (m-1)^2/4, \qquad \text{for } m \text{ odd}, \tag{2'}$$