1106-34-2858 **Cesar Martinez-Garza*** (cxm58@psu.edu), Penn State Berks, Tulpehocken Rd, P.O. Box 7009, Reading, PA 19610, and **William E Manigat** and **William A Keller**. *A Newton-like Method That Permits Zero Derivatives.*

In this paper, we show that the Method of Generalized Quasilinearization can be used to solve the equation $F(x)=0$, if $F(x)$ is a differentiable function on an open interval (a,b), it has a simple zero inside (a,b), and it can be decomposed as the addition of a convex and a concave functions: $F(x)=f(x)+g(x)$. The iterative scheme provided by Generalized Quasilinearization generates two sequences in terms of $f(x)$ and $g(x)$ that converge quadratically to the simple zero of $F(x)$ inside (a,b) even if $F'(x)=0$ inside the interval. We include examples of different cases, including the case when $F(x)$ cannot be naturally decomposed into the addition of convex and concave functions. (Received September 16, 2014)