1077-17-1432   **linlin Chen*** (`linlin.chen@mavs.uta.edu`), Department of Mathematics, University of Texas at Arlington, P.O. Box 19408, Arlington, TX 76019-0408, and **Minerva Cordero** (`cordero@uta.edu`), Department of Mathematics, University of Texas at Arlington, P.O. Box 19408, Arlington, TX 76019-0408. *Equivalent Condition of Primitivity for Semifields.*

For a semifield S of order q^n, we prove that $d \in S$ is a right primitive element if and only if its characteristic polynomial has order $q^n - 1$. With this result, we find that there are 70 right and left primitive elements in Knuth binary semifield of order 2^7. We also show that the image of a right primitive element under an automorphism of S is right primitive and from that it follows Knuth system W has 3 automorphisms. (Received September 19, 2011)