

Clarence F. Stephens



During a time in history when African Americans were considered inferior to whites, few men of color were able to achieve educational success. However, Clarence Stephens overcame many racial barriers to become only the ninth African American to earn a Ph.D. in mathematics.

Clarence Francis Stephens was born on July 24, 1917 in Gaffney, South Carolina. Growing up he faced many hardships, such as the death of his parents at a very young age.

Stephens attended Harbison Institute during his primary years as a student. He later attended Johnson C. Smith University and the University of Michigan.

Stephens had difficulty in funding his graduate studies. He had to find part-time jobs to pay for his studies because there were no teaching assistant positions available for African Americans. He chose the topic of nonlinear difference equations as his doctoral project. While working on this project, Stephens joined the United States Navy.

Clarence Stephens is best known for his methods of teaching, as he dedicated most of his professional career to teaching mathematics. He once said, "I spent forty seven years trying to teach mathematics and I don't think there is a best method." Throughout his lifetime, Stephens has acquired many honors including four honorary doctorate degrees and numerous recognitions for his many distinguished contributions to mathematical education.

The topic for Stephens' doctoral dissertation was nonlinear difference equations. Difference equations are equations written in terms of changes of a particular function. They are very useful when dealing with discrete data such as traffic flow and measuring temperature. Nonlinear difference equations differ from linear difference equations in that they cannot be written in the form of a constant times a variable plus or minus another constant times a variable equaling a constant number.

Fill in the Blank:

1. Clarence Stephens was born in _____ (place).
2. Despite their rough childhood, all six Stephens children graduated from _____.
3. For his graduate degrees Stephens attended _____.
4. Stephens' original dream was to become a _____ teacher.
5. While he was working on his doctorate degree, Stephens joined the _____.

True or False:

1. Clarence Stephens chose the topic of linear algebra for his doctoral project.
2. A difference equation is an equation written in terms of changes of a particular function.
3. Nonlinear difference equations differ from linear difference equations in that they have a degree other than one.
4. Difference equations involve taking a derivative.
5. Difference equations can be used to describe things such as changes of the texture of oil under the differing conditions of heat and pressure in an engine.
6. $a_n = a_{n-1} + c (a_{n-1}) (p - a_{n-1})$ is an example of a nonlinear difference equation.

References:

Distinguished African American Scientists of the 20th Century. "Clarence Stephens." p.296-301.

<http://www.potsdam.edu/MA76/quotes.html>

Interview with Clarence Stephens