

1135-VV-3133      **John Robert Botzum\*** (botzum@kutztown.edu), 5528 Heather Lane, Orefield, PA 18069. *The Phi-bonacci Sequence.*

Sometimes innocent questions from students can stir long-forgotten memories and stimulate mathematical investigation. Last year I took over my wife's Discrete Mathematics course for a week. I spent much of the first class working out elementary induction proofs and introducing recurrence relations. At the end of the class one of the students asked if there were a recurrence relation for the  $n$ th term of the Fibonacci sequence. I was in a hurry to teach a class 45 minutes away so I foolishly replied that I did not think there was. On the drive to my other job I recalled Binet's formula which prompted me to dig up notes on this subject that I had long since forgotten. This paper will discuss my discovery and re-discovery of the beautiful interplay between Binet's recurrence relation, the Golden Mean, and the Fibonacci Sequence as well as discuss whether Binet was the first to discover the formula. (Received September 26, 2017)