

1046-Z1-1891 **Elijah Miguel Allen***, 1413 Blakeley st, Savannah, GA 31406. *Arbitrary Roughness.*

When are $4n+1$ and $4n+3$ both prime? What values of n make $2n+1$, $4n+3$, and $8n+7$ all prime at the same time? With the theorems presented in this paper the required conditions a value n must meet are seen and used to develop an algorithm to find such numbers. Finally, it is shown that for any set of arithmetic progressions that do not represent a complete residue set for any prime that there exist infinitely many n such that the entire set is arbitrarily rough and what this means towards solving problems like the twin prime conjecture. (Received September 16, 2008)