

# A CONJECTURE ON PRIME NUMBERS

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ABSTRACT. A new conjecture on prime numbers is proposed in this short note.

**Conjecture 1.** *Let  $p_n$  denote the  $n$ -th prime number. If we choose  $n$  consecutive natural numbers from the interval  $[2, p_n^2]$  such that they are divisible by  $p_1, p_2, \dots, p_n$  not necessarily in order, then the next set of  $n$  consecutive natural numbers would contain at least one prime number.*

For example, if  $n = 3$ , then  $p_n = 5$  then we choose three consecutive natural numbers between 2 and 25, say 8, 9 and 10. Here 2 divides 8, 3 divides 9 and 5 divides 10. Then in the next set of three consecutive natural numbers we get 11 which is a prime.

A related conjecture would be to guess that the previous set of  $n$  consecutive natural numbers before our choice would also contain at least one prime number.

If this conjecture is true, then we may hope to apply it to other conjectures like Brocard's Conjecture or Grimms's Conjecture.

## REFERENCES

- [1] D. Andrica, *Note on a conjecture in prime Number Theory.*
- [2] P. Erdos, *Beweis eines Satzes von Tschebyschef.*

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