# Fun with Prime Numbers (4)

*Invitation to the Mysterious World of Mathematics*

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# Examples of ABC triples

- The ABC conjecture concerns $C > N^{1+\varepsilon}$.
- For simplicity, we shall try to find ABC triples (A,B,C) satisfying $C > N$.

Example 1

(A,B,C) = (2,3,5)

N =

# Examples of ABC triples (2)

Example 2

(A,B,C) = (7,9,16)

N =

# Examples of ABC triples (3)

- How can we find ABC triples with C>N?
- (Idea) In order to make N smaller, the product ABC should be divisible by a high power of a prime number.

Example 3

(A,B,C) = (1,63,64)

N =

# Examples of ABC triples (4)

- There exist infinitely many ABC triples with $C>N$. But, such triples are very rare.
- The ABC conjecture claims, if we replace N by $N^{1+\varepsilon}>N$, the inequality

$$C > N^{1+\varepsilon}$$

holds for finitely many ABC triples only.