Number theory

Wilson's theorem

A natural number $n > 1$ is a prime number if and only if the product of all the positive integers less than n is one less than a multiple of n.

$$(n - 1)! \equiv - 1 \ (mod \ n) \iff n \ is \ a \ prime \ number$$

In other words, a number n is a prime number if, and only if, $(n - 1)! + 1$ is divisible by n.