The number of primes can be estimated with the function x/ln(x).

To find the number of primes in the range of 768 bits, the prime counting function should be used with the highest possible number in the 768 bit range, which is 2^768 – 1.

The number of primes is (2^768 - 1)/ln(2^768 – 1), which is approximately 2.9164194695997744043524513433502178622897293296864912792350116076646629898613331384432790757395540525477802540154684377019 × 10^228