I have found some interesting fact in factorizing Prime no. I don't know whether someone has already discovered it or not. I have searched Google but haven't find anyone using this method.

If we have the sum and product of the two Prime numbers it is very easy to find the two numbers. I have searched the solution for this equation but everyone is using Quadratic equation to solve it.

But there is a very simple was to solve it.

Let P and Q be 2 Prime number

N = product of P and Q

M = Sum of P and Q

A = M divided by 2

So to find P and Q

We will first square A and then minus it from N and the result will always be a perfect square lets note it as B square

So A2 – N = B2

P = A - B

Q = A + B

**Example 1**

N = 91 (Product of P and Q)

M = 20 (Sum of P and Q)

A = 10 (M/2)

As per the formula

A2 - N = B2

102 – 91 = B2

100 – 91 = 9

B2 = 9

B = 3

P = A – B

= 10 – 3

= 7

Q = A + B

= 10 + 3

= 13