your special pdf

Factorization

what's the factor ?

A factor is a number that divides into
another number exactly and without leaving a remainder.

in short if you are given a number n
$$n \% \text{factor} = 0$$

given a number n   n=36

find it's factors   factors of 36 : 1 2 3 4 6 9 12 18 36

in programming a simple for loop from 1 to n
will do the job for us

Factorization optimization

factor : n%factor=0

factorizatoin : is finding the number's factors

if (n%i==0)

given a number n   if i==2 (2 18) 2, 36/2   if i==4 (4,9) 4, 36/4

find it's factors   if i==1 (1 36) 1, 36/1   if i==6 (6,6) 6,36/6

if n=36   if i==3 (3,12) 3, 36/3

why should i stop at number 6 ?

if i continue i will repeat the factors 9,4 and so on

6*6=36 i should always stop at sqrt(n)