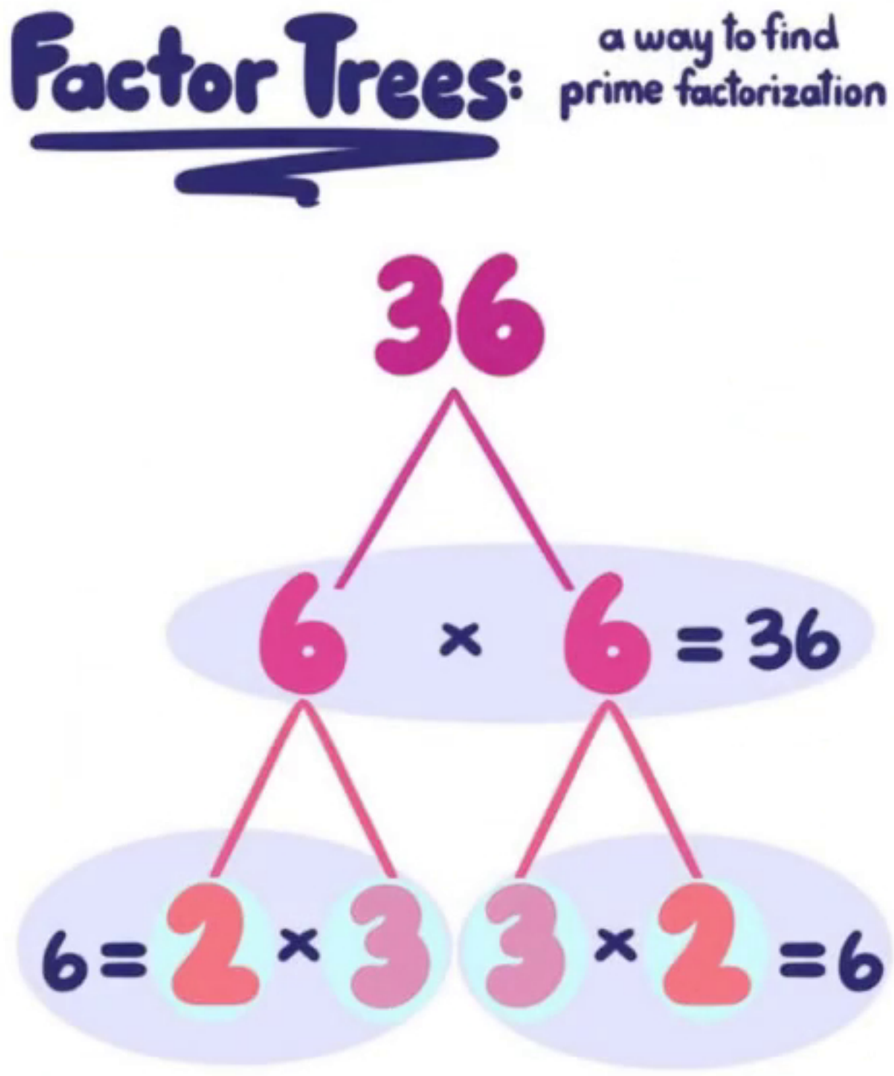
Prime Factorization

Arabic Animated Intuition



Prime Factorization

what's a prime number ?

a prime number is a number n with only two factors 1 and n

given a number n determine if it's a prime or not

n=1 is not a prime (1)

n=2 is a prime (1,2)

n=3 is a prime (1,3)

n=4 is not a prime (1,2,4)

n=5 is a prime (1,5)

Prime Factorization

find the prime factors of the number

n=36

2*18

2*2*9

2*2*3*3

given a number n	n=10	n=15	n=8	n=9	n=24
find it's prime factors	2*5	3*5	2*2*2	3*3	2*2*2*3

How Can we do that ?

Prime Factorization

spoiler alert

i will tell you the solution right now .

if n=36

i=2 n=36/2=18 [2]

n=18/2=9 [2,2]

i=3 n=9/3=3 [2,2,3]

n=3/3=1 [2,2,3,3]

in the end n=1

if n=7

n is a prime number

in the worst case i

would be equal to n

my loop will only go to sqrt(n)

in case

of prime number

if n didn't reach 1

add to my vector n