# Goldbach conjecture

Every even integer greater than 2 can be written as the sum of two primes

## Abstract

This is an approach (not full proof), to be easier to deal with the conjecture.

Just using parity rules , to know which values are ok. So valid numbers are even+even, and odd+odd

| A | B | A+B |
|---|---|---|
| Even | Odd | Odd |
| Odd | Even | Odd |
| Even | Even | Even |
| Odd | Odd | Even |

So , we only want even+even, or odd+odd, because those are the ones that summed give even.

**EXAMPLE**

Suppose even number 12.

We start by,
12 = 11 + 1.

Then subtract 1 to 11, and add one to 1 ...we get

12 = 10 + 2

Subtract 1 to ten and add one to 2

12 = 9 + 3

12 = 8 + 4

12 = 7 + 5

and keep doing that, until we get

12 = 6 + 6 (the same summand..after this it repeats the sequences)

e.g, next sequence is,

A) 12 = 5+ 7

But it has already been verified.

We can only use odd+odd, since primes are odd. So no need to calculate even + even numbers.

**Other information**

Considering numbers, 4,6,8,10

4 is divisible by 2, 6 is divisible by 3, 8 is divisible by 4

2k , for k=1, it always divide evens.

for k=2, which even does it divide? 8

for k= 3 , divides 6, and 12, and 18, 6k , for k = 1.

2k = sum of two equal numbers

2k = k + k

If k is prime, then conjecture holds...as in
2*3 = 3+3
2*5 = 5+5
2*4 = 4+4 (doesnt hold)
2*6 = 6+6 (doesnt hold)
2*7 = 7+7 (holds).
2*9 = 9+9 (doesnt hold, because nine isnt prime).

even A + even A = even ...doesnt hold. (its the sum of two evens, not primes, so k=4 and k = 6, don't hold).

We need to have the following
odd + odd = even

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