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1.(August 2017)

If the a and b are two positive integers with a ≥b and pa where p is a prime and a is non-negative integer then pa

Proof:

Let n1 = p1a1p2a2……..pkak

and n2 = p1b1p2b2……..pkbk where all p with different subscripts are primes but all a and b are non-negative.

For example 35 and 36 can be written as

36 = 22.32.50.70

35 = 20.30.51.71

then we know that

lcm = ∏pimax(ai,bi)

gcd = ∏pimin(ai,bi)

pimax(ai,bi)-min(ai,bi) = pma

So for all i where(i ≠m) ai=bi

And max(am,bm)-min(am,bm) = a

pma (proved)

Series

proof (by Miyad on 5 March,2018)



2.

