

BEAL'S CONJECTURE-COUNTER EXAMPLES

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ABSTRACT:In [1-4], proof for Beal's Conjecture has been presented.

Counter examples for Beal's Conjecture are presented in this paper.

1. STATEMENT OF BEAL'S CONJECTURE:

$$\text{If } A^x + B^y = C^z$$

Where $A, B, C, x, y, z \in \mathbb{Z}^+$ and $x, y, z > 2$ then A, B, C have a common prime factor.

Counter example: 1

$$[2^{88} + 9999999999999^3] = 10^{39}$$

Here, $A = 2; B = 9999999999999; C = 10$

$$x = 88 \quad y = 3 \quad z = 39$$

Note that $x, y, z > 2$ But $\text{gcd}(A, B, C) = 1$

Counter example: 2

$$[2^{233} + 9999999999999^6] = 10^{84}$$

Here, $A = 2; B = 9999999999999; C = 10$

$$x = 233 \quad y = 6 \quad z = 84$$

Note that $x, y, z > 2$ But $\text{gcd}(A, B, C) = 1$

Counter example: 3

$$[2^{205} + 9999999999999^5] = 10^{75}$$

Here, $A = 2; B = 9999999999999; C = 10$

$$x = 205 \quad y = 5 \quad z = 75$$

Note that $x, y, z > 2$ But $\text{gcd}(A, B, C) = 1$

Counter example: 4

$$[2000000000000^3 + 1500000000000^3] = 22489707226377^3$$

Here, $A = 2000000000000; B = 1500000000000; C = 22489707226377$

$$x = 3 \quad y = 3 \quad z = 3$$

Note that $x, y, z > 2$ But $\text{gcd}(A, B, C) = 1$ gcd – greatest common divisor.

References

- [1] Raj C Thiagarajan, "A proof to Beal's Conjecture", *Bulletine of Mathematical Science & Applications*, vol.3, No.2 (2014). Pp 89-93.
- [2] K. Raja Rama Gandhi and Reuven Tint, "proof of Beal's Conjecture", *BMSA*, vol.2, No.3 (2014). Pp 61-64.
- [3] Dr. K. Raja Rama Gandhi, Reuven Tint, Michael Tint, "Alternative solution of the Beal Conjecture including another proof of the Fermat's Last theorem, without references to the other works in the main part", *BMSA*, vol.3, No.1 (2014). Pp 21-28.
- [4] Jamel Ghanouchi, "A proof of Beal's conjecture", *BMSA*, vol.2, No.3 (2013).Pp 39-43.