Title   Fermat's Last Theorem

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Abstract   Fermat's Last Theorem states that there are no natural numbers A, B, C, and n such that
                 $A^n = B^n + C^n$ is true.

                 This effort examines the attributes of the numbers in the equation to show that natural
                 numbers for A, B, and C cannot satisfy it, irrational numbers are required.

Proof   The proposition was first stated as a theorem by Pierre de Fermat around 1637 in the
                  margin of a copy of Arithmetica.

                 https://en.wikipedia.org/wiki/Arithmetica

                 Fermat added that he had a proof that was too large to fit in the margin and because
                 he had done likewise for other since-proved theorems there has since been a search
                 to find a proof.

                 This effort uses the fact that the nth root of a number is irrational unless the number
                 is a number raised to the nth power.

                 Consider the natural numbers A, B, C and n where A>B>C and n>2.

                 Assume Fermat's Last Theorem is true.
                 Then $A^n = B^n + C^n$
                           $= (B^n - C^n)+2C^n$
                           $= 2C^n + 2(B^n-C^n)/2$
                           $= 2(C^n + (B^n-C^n)/2)$
                           $= 2^{(1/n)}(C^n + (B^n-C^n)/2)^{(1/n)}$

                 Thus A is the product of 2 numbers which are nth roots namely
                  $2^{(1/n)}$ and a larger one $(C^n + (B^n-C^n)/2)^{(1/n)}$.
                 These numbers are irrational as is their product.

                 The conclusions are that the theorem is true and the margin probably **wasn't** big enough.