Subject: Fermat
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Fermat Last Theorem Ben Ito 10-29-02 I will prove that Fermat last theorem is translated in error. Diophantus' problem uses non-whole number solutions and Fermat's Latin text does not use the word whole numbers or integers to describe the solutions. The whole number solutions is the essence of the modern interputation of Fermat's theorem. l. Proof. This is the problem in Arithmetica by Diophantus that Fermat's last theorem was written in the margin. "II.8 To divide a given square number into two squares. Given square number 16. x^2 one of the required squares. Therefore 16 - x^2 must be equal to a square. Take a square of the form (mx - 4)^2, m being any integer and 4 the number which is the square root of 16, e.g., take (2x - 4)^2, and equate it to 16 - x^2. Therefore, 4x^2 - 16x + 16 = 16 - x^2, or 5x^2 = 16x, and x = 16/5. The required squares are therefore 256/25, 144/25." The solutions (x) of this problem are not integers. The only reference to an integer is "m being any integer"; however, (m) is not a solution of the problem. Fermat wrote: Cubem autem in duos cubos, aut quadratoquadratum in duos quadratoquadratos, et generaliter nullam in infinitum ultra quadratum potestatem in duos eiusdem nominis fas est dividere.Cuius rei demonstrationem mirabilem sane detexi hanc marginis exiguitas non caparet. Translated: It is impossible for a cube to be written as the sum of two cubes or a fourth power to be written as the sum of two fourth powers or, in general, for any number which is a power greater than the second to be written as a sum of two like powers. I have a truly marvelous demonstration of this proposition which this margin is too narrow to contain.* Fermat does not state if the solutions of X, Y and Z are restricted to whole numbers when n>2. "for any number" does not restrict the solutions of X, Y and Z to be restricted to non-whole numbers as currently believed. Fermat does not use the words whole numbers or integer in the Latin text nor does Diophgantus state that the solution of his problem are integers. "The required squares are therefore 256/25, 144/25." "in general, for any number which is a power greater than the second to be written as a sum of two like powers." The preceeding statement states that second power can be written as a sum of two like powers which is Pythagorean's equation that describes a right triangle. "I have a truly marvelous demonstration of this proposition which this margin is too narrow to contain.* " This statement follows the statement the second power is the solution; therefore, the proposition is that Pythagorean's equation of a right triangle when n=2 is the only solution. The proposition must prove that only the second power that describes a right triangle forms the solutions.I will use Fermat's equation to prove that the second power forms the only solutions that describes a right triangle. Rearanging Fermat's equation, Z = (X^n + Y^n)^(1/n), equation l When the lengths of X and Y are constant, the powers of three and four form a length that is less than the length of the hypotenuse of a right triangle. The maximum length of (equation l) occurs when the power is the second. Therefore, only the second power forms solutions. Example, using X=1 and Y=1, Z=1.414(n=2) > Z= 1.26(n=3) > Z=1.1892(n=4). When the value of n increase the length of Z decreases. Therefore, only the second power forms the length of the hypotenuse (Z) of a right triangle. I have proven that the second power is the only equation that like power sum forms solutions that describes a right triangle of the second power. 3. Conclusion Dipthantus problem, that Fermat's theorem is written next to, does not use integer solutions of x and Fermat's theorem,in Latin text, does not use the word integer. The whole number (integer) only restriction when n>2 forms the problem of Fermat's theorem. I eliminate the integer solutions and solve Fermat's theorem using all whole and non-whole real numbers. Fermat's theorem is then used to form an algebraic proof of Phyagorean's equation. All the pieces of Fermat's theorem come together when the integer restriction is eliminated. 1. The second power forms the only solution. 2. Simple proof of the second power (Phythagorean's equation)." I have a truly marvelous demonstration of this proposition which this margin is too narrow to contain.* "I describe Fermat's proposition using the powers to prove that only the second power forms the length of the hypotenuse of right triangle (second power). Dedicated to the non-smoking (ciggarete) Winona Ryder.