The part of Fermat's theorem

Author: by Run jiang email:jiangrunyun@outlook.com
Mailing address:(In china)四川广安武胜飞龙高中蒋先伦收-638400
College graduate I major in Microelectronics science and technology

Abstract:We can't have an equation where the left hand side is 4 (2C+1) and the right hand side is 8C.The more detailed properties of odd and even numbers will be covered later in this article.What's important is that when a number or an equation maintains certain properties about odd and even numbers. It will be difficult and there may be no other way to solve it.

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Make M*2^n=(n) M is odd.So let's call that O

$(2n+1)^2=4n(n+1)+1=8C+1$ Any odd number to the second power is 8C+1

Extension $a^k=4kC+1$ when a is odd and k is even.In fact,$a^k=4*2^dC+1$ k=(d).

$a^2+b^2-2=16C$ when a+b=8C a,b are odd.

Let a=8C+1 b=8C-1 or a=8C+3 b=8C-3 Equation was set up

There must be an even number of terms in the equation, and the O of these terms is the lowest and the same.

So,We omit the higher term of O. Just verify that it's big enough at the end.

If 8k and $8k^2$ appear, $8k^2$ can be ignored when k is even.

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$X^m+Y^m=A^m$

When X plus Y has no divisor with m

We can get the following properties

$X^m+Y^m=(X+Y)Z^m$ （X,Y,Z,m is odd）

X+Y=(>=3) （by m>=3）

$Z^m=X^{m-1}-X^{m-2}Y+\cdots\cdots\cdots\cdots-XY^{m-2}+Y^{m-1}$

$Z^m=X^{m-1}-X^{m-2}Y+\cdots\cdots\cdots\cdots-XY^{m-2}+Y^{m-1}=(X+Y)C+mY^{m-1}$

Since m is odd, m minus 1 is even

$Y^{m-1}-1$=(>=3)

When X+Y=(>=3)

Z^m-m=(>=3)

Known m is odd

Easy to know

m=4k+1. When Z=4n+1

m=4k+3. When Z=4n+3

（note: when m=4k+1 z=4k+3 , Z^m-m=(1).m=4k+3 z=4k+1 are in same way）

Known

$2Z^m-X^{m-1}-Y^{m-1}=(X-Y)^2(X^{m-3}+X^{m-5}Y^2+\cdots\cdots\cdots\cdots+X^2Y^{m-5}+Y^{m-3})$ ············（1）

$2(Z^m-1)+1-X^{m-1}+1-Y^{m-1}=(X-Y)^2(X^{m-3}+X^{m-5}Y^2+\cdots\cdots\cdots\cdots+X^2Y^{m-5}+Y^{m-3})$

X+Y=(>=3) ①

Know X-Y=(1)② （note X,Y are odd）

By $Z=4n+1$ m is odd
The left-hand side is (> =3), and the right-hand side is (2).
Invalid
When $Z=4n+3$, $m=4k+3$
After that, it's easy to find out about the nature of the n, k, Z, m,X.Y.
$Z^m+1=4(n+1)(1-Z+Z^2-\cdots\cdots+Z^{m-1})=4(n+1)(4k+3-(Z+1)+(Z^2-1)-(Z^3+1)+\cdots\cdots+(Z^{m-1}-1))=4(n+1)((1+Z)C+4k+3)=4(n+1)(4C-1)$③
We want to determine the fundamental properties of X,Y,n, and k
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$Z^m=X^{m-1}-X^{m-2}Y+\cdots\cdots\cdots\cdots-XY^{m-2}+Y^{m-1}=(X+Y)C+mY^{m-1}$
$\cdots\cdots+4n(4k+3)3^{4k+2}+3^{4k+3}-4k-3=(X+Y)C+m(Y^{m-1}-1)$
Let's assume the right-hand side is big enough to O
In this solution,even if the value of the current X and Y combination is small after the O operation, we can assume that it is large. In this way, if it is wrong, it is regarded as an error, and if it is correct, it proves that the O operation value of X and Y is very large.
$\cdots\cdots+4n3^{4k+3}+3^{4k+3}-4k-3=(>=4)$
So $n+k+2=(>=2)$
So $n=(1)$ $k=(>=2)$ or $n=(>=2)$ $k=(1)$
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The following proves that $n=(>=1)$
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We can be sure that $Z^m=\cdots\cdots$ is now fully established.
So,we use Z^{2m}.This is a general approach.
Because there are many proofs here, for unnecessary trouble, it is necessary to reduce the unknown.
You must ensure that there is a correspondence between Z^m and X^{m-1}, Y^{m-1} such as,Z^m-Y^{m-1},$Z^m-1+Y^{m-1}-1+2$.
Because we only know
“$2Z^m-X^{m-1}-Y^{m-1}=(X-Y)^2(X^{m-3}+X^{m-5}Y^2+\cdots\cdots\cdots\cdots+X^2Y^{m-5}+Y^{m-3})$”
So $(2Z^m-X^{m-1}-Y^{m-1})(2Z^m+X^{m-1}+Y^{m-1})$ is best choice.
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$(2Z^m-X^{m-1}-Y^{m-1})(2Z^m+X^{m-1}+Y^{m-1})=4Z^{2m}-(X^{m-1}+Y^{m-1}-2)^2+4(X^{m-1}+Y^{m-1}-2)-4$
$4(2C+1)(-8(n+1)+X^{m-1}+Y^{m-1}-2+32C)=4*3^{8k+6}+4*4n*(8k+6)*3^{8k+5}+4*(4k+3)(8k+5)*16n^2*3^{8k+4}+\cdots\cdots-4+4(X^{m-1}+Y^{m-1}-2)+128C$
$4(2C+1)(-8(n+1)+32C+X^{m-1}+Y^{m-1}-2)=4*3^6-32n+64(4k+3)(8k+5)n^2*3^{8k+4}+\cdots\cdots-4+4(X^{m-1}+Y^{m-1}-2)+128C$
$4(2C+1)(-8(n+1)+32C+X^{m-1}+Y^{m-1}-2)=-32-32n+4(X^{m-1}+Y^{m-1}-2)+128C+64(4k+3)(8k+5)n^2*3^{8k+4}$
By $X+Y=(>=3)$①
Know $(X^{m-1}+Y^{m-1}-2)=(>=4)$
So $n=(>=1)$ （2）
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Before that, I did n’t know what the result would be. I did n’t know my goal.

I could only get it closer to my goals.Of course, there must be $(4n+3)^{8k+6}=\cdots\cdots+4n(8k+6)3^{8k+5}+3^{8k+6}$ in the process.In response to use Z^{2m}

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N is determined, and there are no other properties

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There are also many proofs below.We deliberately make $4-2X^{m-1}-2Y^{m-1}$ appear in the equation.Found that it is beneficial to increase the value of the O operation result of $4-2X^{m-1}-2Y^{m-1}$.Because one of our purposes is to increase the value of the O operation of a known item.when a+b=(5),because a = (1) b = (1) is true, when the O operation value of b increases, that is, b = (2) is not true and we are happy to see it.

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$(2Z^m+X^{m-1}+Y^{m-1}-4)(2Z^m+X^{m-1}+Y^{m-1})=4Z^{2m}-4+2(Z^m+1)(X^{m-1}+Y^{m-1}-2)+(X^{m-1}+Y^{m-1}-2)^2+4-2X^{m-1}-2Y^{m-1}$

（by when $a+b=8C$ $a^2+b^2-2=16C$）

$32(2C+1)=4(3^{8k+6}-1)+4-2X^{m-1}-2Y^{m-1}+64C$

$32(2C+1)=4(3^6-1)+4-2X^{m-1}-2Y^{m-1}+64C$

$32(2C+1)=4(3^2-1)+4-2X^{m-1}-2Y^{m-1}+64C$

$X^{m-1}+Y^{m-1}-2=(>=5)$ （3）

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I did not expect such a result.Regarding the result, we can only choose a new equation. Because the original equation can no longer produce new results. And the new equation does not necessarily have a considerable result. Just like before, use Z^{2m} is to add a new equation.I have tried many times to get these valuable equations.

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$X^{m-1}+Y^{m-1}-2$ is determined, and there are no other properties

$4XY(X^{m-3}+X^{m-5}Y^2+\cdots\cdots\cdots\cdots$

$+X^2Y^{m-5}+Y^{m-3})+4Z^m-2(Z^m+1)=4(X^{m-1}+X^{m-3}Y^2+\cdots\cdots+Y^{m-1})-2(Z^m+1)$

By ③ and $X^{m-1}=8C+1$ $X^{m-3}Y^2=8C+1$ ⋯⋯

$=32C+8k+8n+16$

$4XY(X^{m-3}+X^{m-5}Y^2+\cdots\cdots\cdots\cdots$

$+X^2Y^{m-5}+Y^{m-3})+4Z^m-2(Z^m+1)=4XY(X^{m-3}+X^{m-5}Y^2+\cdots\cdots\cdots\cdots$

$+X^2Y^{m-5}+Y^{m-3})+X^{m-1}+Y^{m-1}-2+(2Z^m-X^{m-1}-Y^{m-1})$

$=4XY(X^{m-3}+X^{m-5}Y^2+\cdots\cdots\cdots\cdots$

$+X^2Y^{m-5}+Y^{m-3})+X^{m-1}+Y^{m-1}-2+(X-Y)^2(X^{m-3}+X^{m-5}Y^2+\cdots\cdots\cdots\cdots+X^2Y^{m-5}+Y^{m-3})$

$=(X+Y)^2(X^{m-3}+X^{m-5}Y^2+\cdots\cdots\cdots\cdots+X^2Y^{m-5}+Y^{m-3})+X^{m-1}+Y^{m-1}-2=(>=5)$

In addition

$4XY(X^{m-3}+X^{m-5}Y^2+\cdots\cdots\cdots\cdots$

$+X^2Y^{m-5}+Y^{m-3})+4Z^m-2(Z^m+1)=4(X^{m-1}+X^{m-3}Y^2+\cdots\cdots+Y^{m-1})-2(Z^m+1)$

$=32C+8k+8n+16$

$32C+8k+8n+16=(>=5)$

$k+n=(1)$

By （2）$n=(>=1)$

k=(>=1)

k is determined, and there are no other properties

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This is exactly what we imagined before. $Z^m=X^{m-1}-X^{m-2}Y+\cdots\cdots\cdots\cdots-XY^{m-2}+Y^{m-1}$ is used here.Or,n and k appears on the left side of the equation.The right side of the equation uses the known equation to find the result of its O operation.

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Know n=(>=2) k=(1) or n=(>=1)　k=(>=2)

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Now, start to find the attributes of X and Y.Because it is needed later. As I said before, suppose the value of the O operation of the X and Y items is large enough. Now, start to prove that the value of the operation O of X and Y is large enough.

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By （3） $X^{m-1}+Y^{m-1}-2=(>=5)$

When X,Y are 16C-3,16C+3 or 16C+5,16C-5 or 16C+1, 16C+7 or 16C-1 16C-7 ,X,Y do not meet $X^{m-1}+Y^{m-1}-2=(>=5)$

Such as X=16C-3 , $X^{2k+1}=16C-3^{2k+1}=16C-3+3(1-3^{2k})$ by k=(>=1), $X^{2k+1}=16C-3$

$X^{m-1}+Y^{m-1}-2=X^{4k+2}+Y^{4k+2}-2=(16C-3)^2+(16C+3)^2-2=32C+16$

So X,Y are 16C-1,16C+1 or 16C+7,16C-7 or 16C+3, 16C+5 or 16C-3 16C-5

Know XY=16C-1

$Z^m+1=4(n+1)(1-Z+Z^2+\cdots\cdots+Z^{m-1})=4(n+1)(1+Z^2+\cdots\cdots+Z^{m-1}-Z-Z^3-\cdots\cdots-Z^{m-2})$

$Z^m+1=4(n+1)(8C+2k+2-Z(2k+1))=4(n+1)(8C+2k+2-(4n+3)(2k+1))$

By n=(>=1) k=(>=1)

$Z^m+1=32C-4(n+1)$

Z^m is determined, and there are no other properties

$Z^m+4n+5=64C+4n*3^{4k+3}+3^{4k+3}+4n+5=64C+16n(2C+1)+3^3(3^{4k}-1)+32$

Science n=(1) k=(>=2)　$16n(2C+1)=32+64C$　$(3^{4k}-1)=64C$

Science n=(>=2) k=(1)　$16n(2C+1)=64C$　　$(3^{4k}-1)=64C+32$

So $Z^m+4n+5=64C$

$Z^m=64C-4n-5$

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This is also necessary because it can reduce the amount of subsequent calculations. In other words, Z=-4n-5

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$2(X+Y)^2(X^{m-3}+X^{m-5}Y^2+\cdots\cdots\cdots\cdots+Y^{m-3})(-X^{m-1}-Y^{m-1})=$
$-(4Z^m+8XY(X^{m-3}+X^{m-5}Y^2+\cdots\cdots\cdots\cdots$
$+Y^{m-3}))(Y^{m-1}-X^{m-1})-8X^{m-1}(X(X+Y)(X^{m-3}+X^{m-5}Y^2+\cdots\cdots\cdots\cdots$
$+Y^{m-3}))+(Y^{m-1}-X^{m-1})^2+2(Y+X)^2(Y-X)^2(X^{m-3}+X^{m-5}Y^2+\cdots\cdots\cdots\cdots+Y^{m-3})^2$

$-(Z^m+2XY(X^{m-3}+X^{m-5}Y^2+\cdots\cdots\cdots\cdots$

$+Y^{m-3}))(Y^{m-1}-X^{m-1})-2X^{m-1}(X(X+Y)(X^{m-3}+X^{m-5}Y^2+\cdots\cdots\cdots+Y^{m-3}))=(D)$ （4）
D is a big number
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$Y^{m-1}-X^{m-1}=(Y-X)C$
Here, X-Y = 16C-2 is used cleverly when X = 16C-1 or X = 16C-7 .……
This is another new equation.Because at any time Z^m=64C-4n-5 will cause the equation to hold. However, m can be not given directly. X, Y can appear directly in any equation. However, X and Y are 16C-1, 16C+1…….C is an arbitrary number, so that the O operation value of a certain two items is very small.So, we have to consider -1 or -7 …… in 16C-1, 16C+1…… in X and Y instead of 16C
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$((64C+4n+5-2(16C-1)(8C+2k+1))(Y-X)((X^{2k}+X^{2k-2}Y^2+\cdots\cdots\cdots$
$+Y^{2k})^2-X^2Y^2(X^{2k-2}+X^{2k-4}Y^2+\cdots\cdots\cdots$
$+Y^{2k-2})^2)-2(8C+1)(X(8C+2k+1)))(X+Y)=(D)$
$((64C+4n+5-2(16C-1)(8C+2k+1))(Y-X)((8C+k+1)^2-(8C+1)(8C+k)^2)-2(8C+1)$
$(X(8C+2k+1)))(X+Y)=(D)$
$((4n+5+2(2k+1))(Y-X)((k+1)^2-k^2)-2X(2k+1))=(>=4)$
$((4n+5+2(2k+1))(Y-X)-2X)=(>=4)$ （5）

X is 16C+5 or 16C-3
By Y-X=16C-2 and （5）
(4n+5+2(2k+1)+5)=(>=4)
(4n+5+2(2k+1)-3)=(>=4)
Invalid

X is 16C+7 and Y is 16C-7
Y-X=16C+2 $X^2=(16C+7)^2=16C+49=16C+1$
By （4）
$-(Z^m+2XY(X^{m-3}+X^{m-5}Y^2+\cdots\cdots\cdots$
$+Y^{m-3}))(Y^{m-1}-X^{m-1})-2X^{m-1}(X(X+Y)(X^{m-3}+X^{m-5}Y^2+\cdots\cdots\cdots+Y^{m-3}))=(D)$

$((64C+4n+5-2(16C-1)(8C+2k+1))(Y-X)((X^{2k}+X^{2k-2}Y^2+\cdots\cdots\cdots$
$+Y^{2k})^2-X^2Y^2(X^{2k-2}+X^{2k-4}Y^2+\cdots\cdots\cdots$
$+Y^{2k-2})^2)-2(16C+1)(X(16C+2k+1)))(X+Y)=(D)$

$((4n+5+2(2k+1))(Y-X)-2X)=(>=5)$

(4n+5+2(2k+1)-7)=(>=5)
Invalid

So X is 16C+1 or 16C-1
Know X+Y=(>=6) （by 4k+1 is error so m=5 is error so X+Y=(5) is error）
$X=16C_1+1$ $Y=16C_2-1$ easy to konw C_1+C_2=(>=1) so C_1-C_2=(>=1)

$XY=32C-1$

$Z^m=X^{m-1}-X^{m-2}Y+\cdots\cdots\cdots\cdots-XY^{m-2}+Y^{m-1}$

$Z^m=(X+Y)C+mX^{m-1}$

X is 16C+1 or 16C-1

Easy to know $4k+4n+8=32C$ $Z^m=64C-4n-5$

$(4n+3)(-1+Z^{m-1}+1)=Z^m$

$(4n+3)(1+(16n^2+24n+8)(2k+1+(16n^2+24n+8)((2k+1)k+8C)))=Z^m$

When k=(1)

$32+112n+48k+48n^2+144nk+3*32n^2+3*64k=Z^m+4n+5+512C$

$(4n+3)(1+(16n^2+24n+8)(2k+1+(16n^2+24n+8)((Z^2)^{2k-1}+2(Z^2)^{2k-2}+3(Z^2)^{2k-3}+\cdots\cdots+2k)))=Z^m$

$(4n+3)(1+(16n^2+24n+8)(2k+1+(16n^2+24n+8)((16n^2+24n+9)^{2k-1}+2(16n^2+24n+9)^{2k-2}+3(16n^2+24n+9)^{2k-3}+\cdots\cdots+2k)))=Z^m$

$(4n+3)(1+(16n^2+24n+8)(2k+1+(16n^2+24n+8)((9)^{2k-1}+2(9)^{2k-2}+3(9)^{2k-3}+\cdots\cdots+2k+16C)))=Z^m$

$(4n+3)(1+(16n^2+24n+8)(2k+1+(16n^2+24n+8)((9)+2+3(9)+4+5(9)\cdots\cdots+2k+16C)))=Z^m$

$(4n+3)(1+(16n^2+24n+8)(2k+1+(16n^2+24n+8)((9)k^2+k(k+1)+16C)))=Z^m$

$32+112n+48k+48n^2+144nk+3*32n^2+64n^3+3*64k(1+10k)=Z^m+4n+5+1024C$

$Z^m=X^{m-1}+Y^{m-1}-X^{m-2}Y-XY^{m-2}+\cdots\cdots\cdots\cdots-X^{2k+1}Y^{2k+1}$

$Z^m=(X+Y)^2C-(4k+3)X^{2k+1}Y^{2k+1}$

$XY=32C-1$

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This shows that $Z^m+(4k+3)X^{2k+1}Y^{2k+1}$ cannot be very large after the O operation.Because $Z^m=(4n+3)^{4k+3}$ k=(>=1)……

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When a,b,m is odd.

$a^m+b^m=(a+b)(a^{m-1}+\cdots\cdots$
$+b^{m-1})=(a+b)(ma^{m-1}+(a+b)C)=(a+b)(m+4(m-1)C+(a+b)C)$

Because $a^{m-1}=4(m-1)C+1$

So $a^m+b^m=(a+b)m+d$ The O operation of d is large, when the O operation of a+b is large

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$1-3^{4k}=1-(4-1)^{4k}=16k-16*4k*(4k-1)/2+\cdots\cdots=16k+32k+\cdots\cdots$

In future calculations, please keep more terms when expanding.

The next strategy is to use $a^m+(4k+3)^m(XY)^m=C$ to get $a+(4k+3)(XY)$. Use $(4k+3)(XY)=(4k+3)(XY)^{2k+1}+C$ and then change $(4k+3)(XY)^{2k+1}$ to $(4n+3)^{4k+3}$.In this process, there will be many single k, n, nk.

First find k=(>=2), then find that k has a large in O operation, and then substitute$(4n+3)^{8k+6}-(4k+3)^2(XY)^{4k+2}=2^{11}C$

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（32nk=(>=8) so 32nk=256C）

When k=(1) n=(>=2) （this can reduce trouble）

$3^{2k}(4n+3)^{4k+3}+3^{2k}(4k+3)(XY)^{2k+1}=256C$

$(4n+3)^{6k+3}+(4k+3)^{2k+1}(XY)^{2k+1}-8nk+8k^2-16k^3=256C$

$((4n+3)^3+(4k+3)(XY))(2k+1)-8nk+8k^2-16k^3=256C$

By $(XY)^{2k}=32C_1*2k+1=64kC_1+1$

$((4n+3)^3+(4k+3)(XY)^{2k+1})(2k+1)-8nk+8k^2-16k^3+64kC_1(2C+1)=256C$

By $Z^m=(X+Y)^2C-(4k+3)X^{2k+1}Y^{2k+1}$

$((4n+3)^3-Z^m)(2k+1)-8nk+8k^2-16k^3+64kC_1(2C+1)=256C$

By $32+112n+48k+48n^2+144nk+3*32n^2+64n^3=128+Z^m+4n+5+256C$（k=(1)）

$(-48k-144nk)(2k+1)-8nk+8k^2-16k^3+128+64kC_1(2C+1)=256C$

$8k(k-6)+8nk+64kC_1(2C+1)=128+256C$

$8k(k+2)+8nk+64kC_1(2C+1)=256C$ （appear nk and the O of it is small.It is goal ）

$(4n+3)^{4k+3}+(4k+3)(XY)^{2k+1}=256C$

$16n^2(4n+3)^{4k+1}+3(8n+3)(4n+3)^{4k+1}+(4k+3)^{2k+1}(XY)^{2k+1}-3*8k^2-3*8k-3*16k=256C$

$-4n*3*(4n+3)^{4k+1}+16n^2(4n+3)+3^2(4n+1)(4n+3)^{4k+1}+(4k+3)^{2k+1}(XY)^{2k+1}-3*8k^2-3*8k-3*16k=256C$

$-4n*3*(4n+3)^{4k+1}+16n^2(4n+3)+3^2(4n+1)^{2k+1}(4n+3)^{4k+1}+(4k+3)^{2k+1}(XY)^{2k+1}-3*8k^2-3*8k-3*16k+8nk=256C$

By $8k(k+2)+8nk+64kC_1(2C+1)=256C$

$-4n*3*(4n+3)^{4k+1}+16n^2(4n+3)+3^2(4n+1)^{2k+1}(4n+3)^{4k+1}+(4k+3)^{2k+1}(XY)^{2k+1}-32k^2-3*8k-64k=256C+64kC_1(2C+1)$

$-4n*3*(4n+3)^{4k+1}+16n^2(4n+3)+3^{4k+2}(4n+1)^{2k+1}(4n+3)^{4k+1}+(4k+3)^{2k+1}(XY)^{2k+1}-32k^2-3*8k-64k+9(1-(4-1)^{4k})(4n+1)^{2k+1}(4n+3)^{4k+1}=256C+64kC_1(2C+1)$

$-4n*3*(4n+3)^{4k+1}+16n^2(4n+3)+3^{4k+2}(4n+1)^{2k+1}(4n+3)^{4k+1}+(4k+3)^{2k+1}(XY)^{2k+1}-32k^2-3*8k-64k+3(16k+32k)=256C+64kC_1(2C+1)$

$-4n*3*(4n+3)^{4k+1}+16n^2(4n+3)+3^{4k+2}(4n+1)^{2k+1}(4n+3)^{2k+1}+(4k+3)^{2k+1}(XY)^{2k+1}-32k^2-3*8k-16k-3*32k+3^{4k+2}(4n+1)^{2k+1}(4n+3)^{2k+1}((4n+3)^{2k}-1)=256C+64kC_1(2C+1)$

$-4n*3*(4n+3)^{4k+1}+16n^2(4n+3)+3^{4k+2}(4n+1)^{2k+1}(4n+3)^{2k+1}+(4k+3)^{2k+1}(XY)^{2k+1}-32k^2-3*8k-16k-3*32k+5(8*nk+8k+16k-32k^2)=256C+64kC_1(2C+1)$

$-4n*3*(4n+3)^{4k+1}+16n^2(4n+3)+3^{4k+2}(4n+1)^{2k+1}(4n+3)^{2k+1}+(4k+3)^{2k+1}(XY)^{2k+1}-3*32k+5*8*nk+5*16k=256C+64kC_1(2C+1)$

$-4n*3*(4n+3)^{4k+1}+16n^2(4n+3)+(9(4n+1)(4n+3)+(4k+3)(XY))(2k+1)-3*32k+5*8*nk+5*16k=256C+64kC_1(2C+1)$

$-4n*3*(4n+3)^{4k+1}+16n^2(4n+3)+(9(4n+1)(4n+3)+(4k+3)(XY)^{2k+1})(2k+1)-3*32k+5*8*nk+5*16k+128kC=256C$

By $Z^m=(X+Y)^2C-(4k+3)X^{2k+1}Y^{2k+1}$

$-4n*3*(4n+3)^{4k+1}+16n^2(4n+3)+(9(4n+1)(4n+3)-Z^m)(2k+1)-3*32k+5*8*nk+5*16k=256C$

By $32+112n+48k+48n^2+144nk+3*32n^2+3*64k=Z^m+4n+5+256C$

$-4n*3*(4n+3)+16n^2(4n+3)+(9*4n-48k-144nk-3*64k)(2k+1)-3*32k+5*8*nk+5*16k=256C$

$-4n*3*(4n+3)+16n^2(4n+3)+(-48k-144nk)2k+9*4n=256C$

k=(>=2) （use nk before it）

$3^{3k}(4n+3)^{4k+3}+(4k+3)3^{3k}(XY)^{2k+1}=1024C$

$(4n+3)3^k(4n+3)^{6k+2}+(4k+3)^{3k+1}(XY)^{3k+1}+32kC+4k^2(2C+1)+16k(2C+1)=1024C$

$4n(4n+3)^{6k+2}+3^{k+1}(4n+3)^{6k+2}+(4k+3)^{3k+1}(XY)^{3k+1}+4k^2(2C+1)+16k(2C+1)+32kC=1024C$

$4n(4n+3)^2+3^{3k+1}(4n+3)^{6k+2}+(4k+3)^{3k+1}(XY)^{3k+1}+32kC+4k^2(2C+1)+3^k(1-(4-1)^{2k})(4n+3)^{6k+2}+16k(2C+1)=1024C$

$4n(4n+3)^2+(3(4n+3)^2+(4k+3)(XY))(3k+1+4k(2C+1)+128C+4*3k(3k+1)(2C+1))+4k^2(2C+1)+8k+16k+32kC+16k(2C+1)=1024C$

$4n(4n+3)^2+(3(4n+3)^2+(4k+3)(XY)^{2k+1})(3k+1+4k(2C+1)+128C)+4k^2(2C+1)+8k+32kC=1024C$

By $Z^m=(X+Y)^2C-(4k+3)X^{2k+1}Y^{2k+1}$

$4n(4n+3)^2+(3(4n+3)^2-Z^m)(3k+1+4k(2C+1)+128C)+4k^2(2C+1)+8k+32kC=1024C$

By $32+112n+48k+48n^2+3*32n^2+144nk+64n^3+64kC=Z^m+4n+5+1024C$ （by k=(>=4)）

$4n(4n+3)^2+((-9*4n-48k-3*32n^2-144nk-64n^3-64kC)(3k+1+4k(2C+1)+128C)+4k^2(2C+1)+8k+32kC=1024C$

$8k-27*4nk+32kC-48k+4k^2(2C+1)=1024C$

$(3-8)*8k+4nk+32kC+4k^2(2C+1)=1024C$

$3*8k+4nk+32kC+4k^2(2C+1)=1024C$

When k=(2)

By $4n+4k+8=32C$

n+2=(2)

n+6=(>=3)

$(6+n)4k+32kC+4k^2(2C+1)=1024C$

k=(>=3)

So k=(>=6)

$Z^m=3^{4k+3}+4n(4k+3)3^{4k+2}+16n^2(4k+3)(2k+1)3^{4k+1}$
$+(4k+3)(2k+1)(4k+1)64n^3 3^{4k-1}+2^{11}C$

$Z^m=3^{4k+3}+4n3^{4k+3}+16n^2 3^{4k+2}+64n^3 3^{4k}+2^{11}C=27+27*4n+9*16n^2+64n^3+27*16k+2^{11}C$

$(4n+3)^{8k+6}-(4k+3)^2(XY)^{4k+2}=2^{11}C$

$3^{4k}(4n+3)^{8k+6}-3^{4k}(4k+3)^2(XY)^{4k+2}=2^{11}C$
$3^{4k}(16n^2+3*8n)(4n+3)^{8k+4}+3^{4k+2}(4n+3)^{8k+4}-(4k+3)^{4k+2}(XY)^{4k+2}=2^{11}C$
$(16n^2+3*8n)(4n+3)^4+(3(4n+3)^2+(4k+3)(XY))((4k+2)(3(4n+3)^2)^{4k+1}-(3(4n+3)^2+(4k+3)(XY))(8C+1))=2^{11}C$
$(16n^2+3*8n)(4n+3)^4+(3(4n+3)^2+(4k+3)(XY)^{2k+1})((4k+2)(3(4n+3)^2)^{4k+1}-(3(4n+3)^2+(4k+3)(XY)^{2k+1})(8C+1))=2^{11}C$
By $Z^m=(X+Y)^2C-(4k+3)X^{2k+1}Y^{2k+1}$
$(16n^2+3*8n)(4n+3)^4+(3(4n+3)^2-Z^m)((4k+2)(3(4n+3)^2)^{4k+1}-(3(4n+3)^2-Z^m)(8C+1))=2^{11}C$
By $Z^m=27+27*4n+9*16n^2+64n^3+27*16k+2^{11}C$
$(16n^2+3*8n)(4n+3)^4+(-9*4n-3*32n^2-64n^3-27*16k)(2(3(4n+3)^2)-(-9*4n-3*32n^2-64n^3-27*16k)(8C+1))=2^{11}C$ （note：(8C+1) in it is result of operation）
$-81*64n^2=(>=9)$
Invalid
Refer to the introduction：
The manuscript is for the most part simple.Now let's look at some of the wrong things. And it can help us find the right way.
Refer to the content：

Let Y is even
$X^N+Y^N=Z^N$ X,Y,Z co-prime
$X^N=(Z^{N/2}+Y^{N/2})(Z^{N/2}-Y^{N/2})$ $(Z^{N/2}+Y^{N/2}),(Z^{N/2}-Y^{N/2})$ co-prime
N>2 N=m/n m,n are odd
$X_1^N=Z^{N/2}+Y^{N/2}$
$(X_1^{N/2}+Y^{N/4})(X_1^{N/2}-Y^{N/4})=Z^{N/2}$
$X_1^{N/2}+Y^{N/4}=Z_1^{N/2}$
In the same way
$X_2^{N/4}+Y^{N/16}=Z_2^{N/4}$
…………
When $(a^{1/4}+b^{1/4})(a^{1/4}-b^{1/4})(a^{1/2}+b^{1/2})=(1)$
$a^{1/4}-b^{1/4}=(1/4)$
In addtion
$Z_1^{N/2}-X_1^{N/2}=(>=1/2)$
$Y^{N/4}=(>=1/2)$ $Y^N=(>=2)$
$Z_2^{N/4}-X_2^{N/4}=(>=1/4)$
$Y^{N/16}=(>=1/4)$ $Y^N=(>=4)$
…………
Y^N infinite
When m,n are even,In the same way.

Now let's think about the following questions.
$Z^m=(X+Y)^2C-(4k+3)X^{2k+1}Y^{2k+1}$
$(4n+3)^{4k+3}+(4k+3)X^{2k+1}Y^{2k+1}=(X+Y)^2C$
We're going to use $A^{2C+1}+B^{2C+1}=(A+B)(2C+1)$ note $Z^m=64C-4n-5$
In the above equation, A plus B is equal to (D), and D is large enough.

By $X^{2k+1}Y^{2k+1}$ It constrains 2C+1 to be 2k+1 or 4k+1 or 6k+1 or 8k+1

Notice they're both 4C+1 Rather than 4C-1

When we expand parts of $(4n+3)^{4k+3}$, part of $(4n+3)^{4k+3}$ becomes part of A.

That part of $(4n+3)^{4k+3}$ is E.The other part is F.

By $A^{2C+1}+B^{2C+1}=(A+B)(4C+1)$

$E+(F+(4k+3)XY)(2C+1)=2^{11}C$

$E+(F-Z^m)(2C+1)=2^{11}C$

$E+F+4C(F-Z^m)-Z^m=2^{11}C$

$4C(F-Z^m)=2^{11}C$

So It doesn't make sense to change n.because $X^{2k+1}Y^{2k+1}$ constrains 2C+1 to be 2k+1 or 4k+1 or 6k+1 or 8k+1

And we found that k=(1) is always true.

Because,K is what we added.When we add a k, we definitely add a k^2.Or k*C is too big and meaningless.The way it came about was too simple.

Of course.n*k is the product of change.What is remarkable is that it is chaotic.Unconstrained.We see it in many wrong cases.Each time,it's going to be an 8n*k one day, a 16n*k the next.

So there has to be a situation. It takes it out of the base case.

And then we need one that has k in it and it =(G)   G is low number.

And then we have to get out of the way.

Because the original formula is not going to get us what we want.

Because it's in this form,

$(4n+3)^3+(4k+3)X^{2k+1}Y2^{k+1}=(X+Y)^2C$

So if we still have a solution to this, we can definitely solve for X and Y.