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*Solution Idea:*

*We have to calculate (a^n + b^n) mod2 ^ 64*. But here, it is mentioned that all the input will be of 32 bit *mod 2 ^ 64 so open unsigned long long, llu on the line, reaches the upper limit will be automatically modulo.*

*Then the formula is. I was pushing the law found in the formula.*

*# a ^ 2 + b ^ 2 = (a + b) \* (a + b) -2 \* a \* b*

*# a ^ 3 + b ^ 3 = (a ^ 2 + b ^ 2) \* (a + b) -a \* b (a + b)*

*# a ^ 4 + b ^ 4 = (a ^ 3 + b ^ 3) \* (a + b) -a \* b (a ^ 2 + b ^ 2)*

*now --*

*1.a^n + b^n = (a^(n-1)+b^(n-1))\*(a+b) - a\*b\*(a^(n-2)+b^(n-2))*

*2. Xn = a^n + b^n*

*3 . Xn = pXn-1 + qXn-2*

*(p -q) (Xn-1) (pXn-1 - qXn-2) (Xn )*

*4. x = =*

*(1 0) (Xn-2) ( Xn-1 + 0 ) (Xn-1)*

*5. from this*

*(p -q) (X1) (Xn)*

*( )^(n-1) x =*

*(1 0) (X0) (Xn-1)*