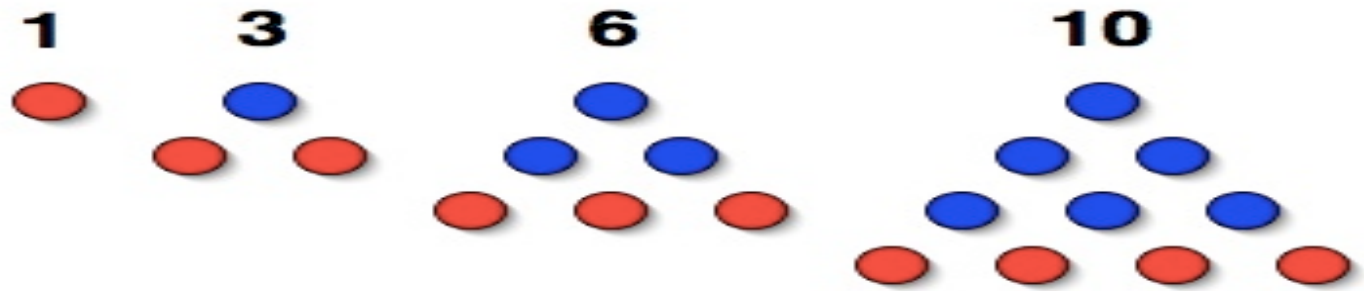
TRIANGLE NUMBERS

T_n = n^{th} triangle number

= the sum of the first n positive integers

$$= \frac{1}{2} n(n+1)$$

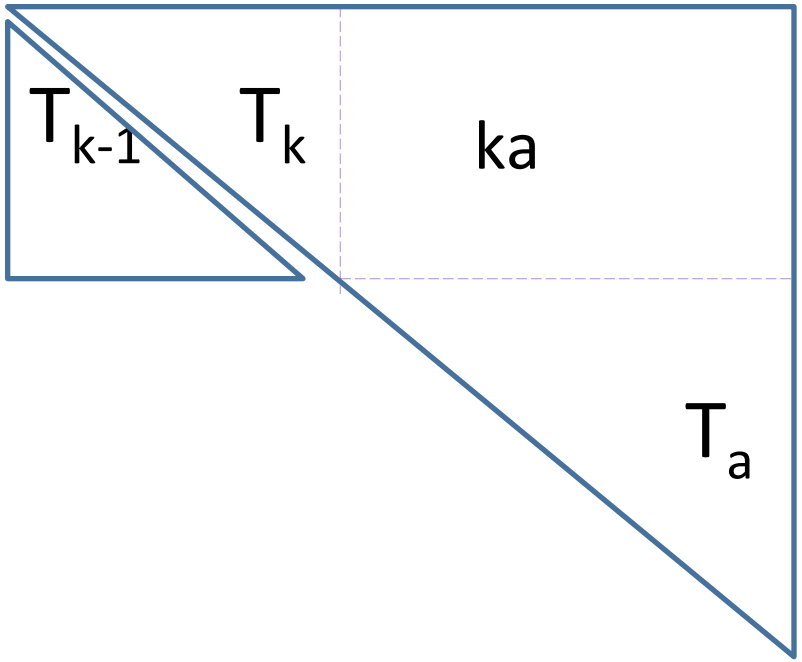


INTERESTING FACT 1

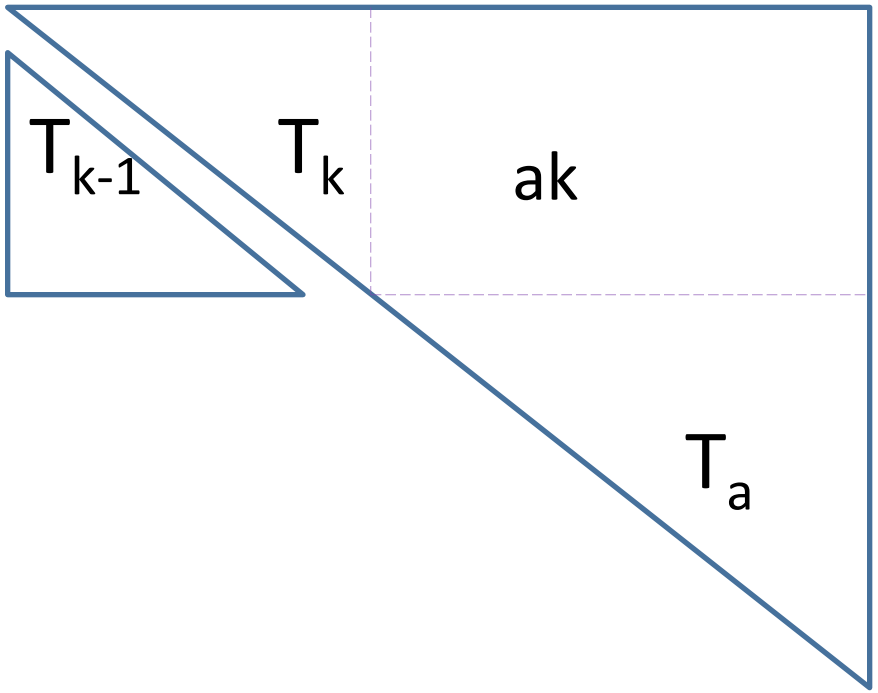
- **Consecutive triangle numbers add up to a square number**

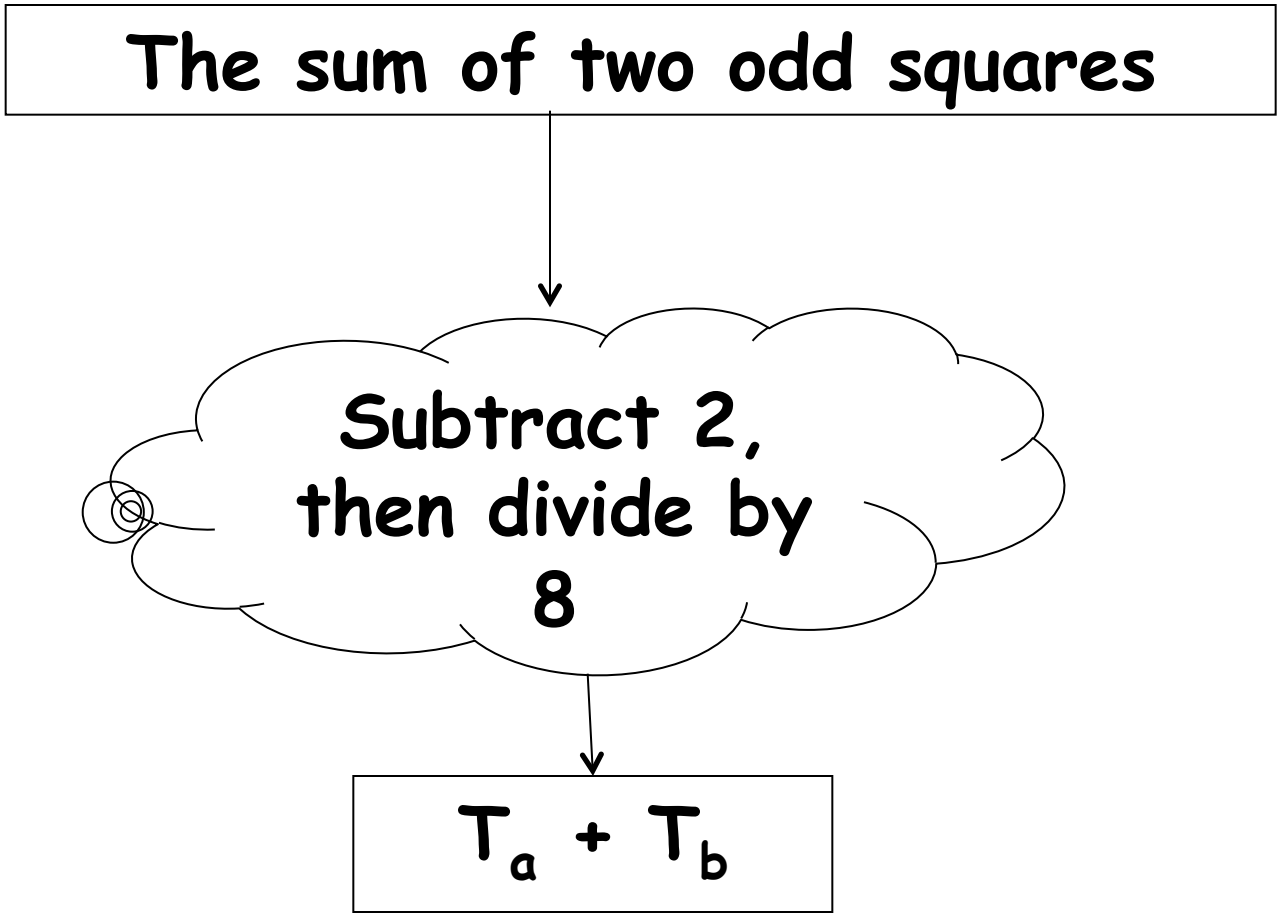
INTERESTING FACT 2

- 8 x Triangle number +1= square number (odd)


T_{k-1}
T_k
ka
T_a

$$T_{k-1} + T_{k+a} = k^2 + ak + T_a$$





Then the odd squares are $(2a + 1)^2$ and $(2b + 1)^2$

- Fascinating Triangle Numbers by Shyam Sunder Gupta

www.shyamsundergupta.com/triangle

INTERESTING FACT 1

- Consecutive triangle numbers add up to a square number