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A simple computation of square-triangular numbers.

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The triangular numbers which are also perfect squares are known as square-triangular numbers (STN). First, the proof of the following theorem is given: If $a_{sup(2)}(n)$ denotes the n th STN then for n greater as equal 3 $a(n) = 6 a(n-1) - a(n-2)$ while $a(1)=1$, $a(2)=6$. The second result aims at the index of the triangular number which is a STN: If $T(p)$ is the p th triangular number which is also the n th STN, then $p = K_{sup(2)}(n) - (1+(-1)^{sup(n)})/2$ where $K(1)=1$, $K(2)=3$ and $K(n) = 2 K(n-1) + K(n-2)$ for n greater as equal 3.

Classification: F60