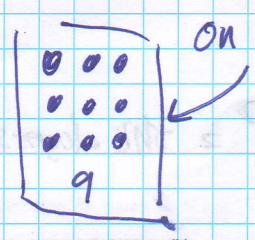
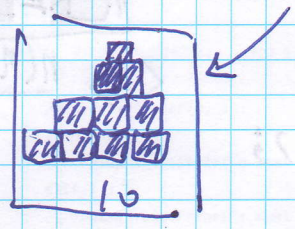


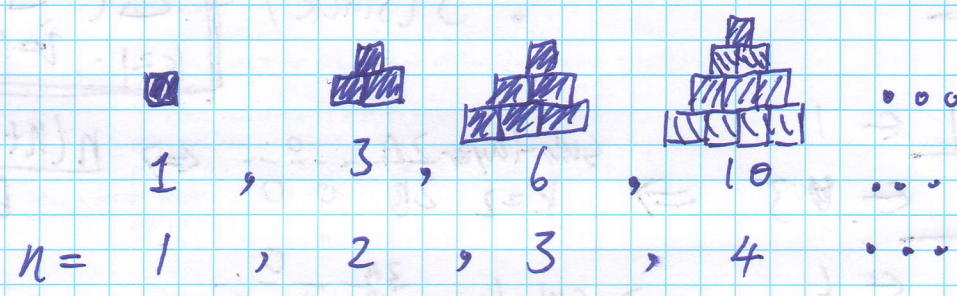
Polygonal Number

Here are some polygonal number arranged in different shape,
the number 10 is an example. But 10 can be arrange in triangle;



on other hand 9 in square.

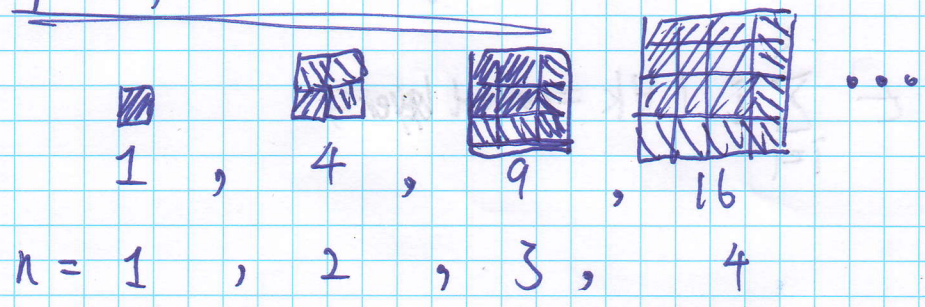
Example (1) - Triangular Number



Formular

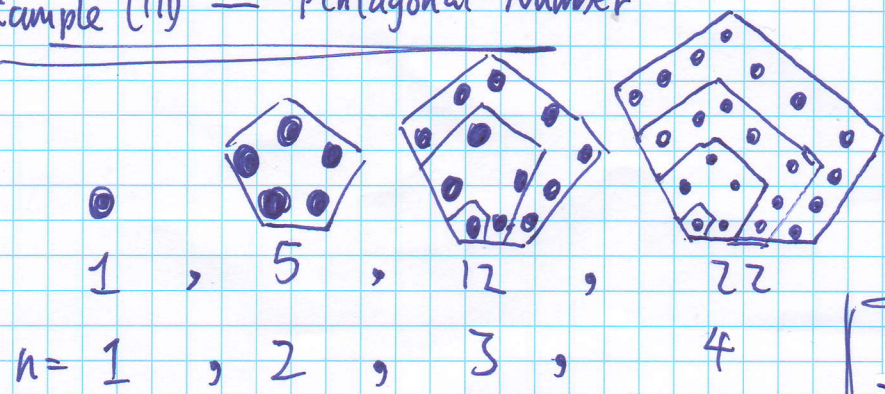
$$= \frac{1}{2} (n^2 + n)$$

Example (1) - Square Number



$$\frac{1}{2} (2n^2 - 0n) = n^2$$

Example (1) - Pentagonal Number



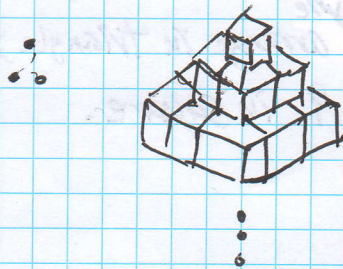
$$= \frac{1}{2} (3n^2 - n)$$

The n^{th} s-sided polygonal number formular:

$$= \frac{(s-2)n^2 - (s-4)n}{2}$$

Pyramidal Numbers

Square pyramidal number



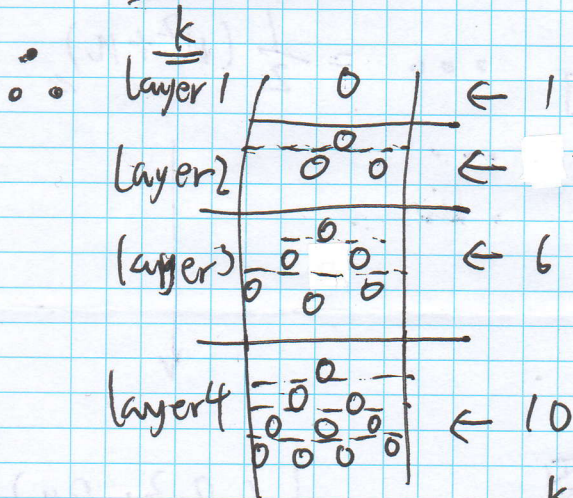
$\leftarrow 1$
 $\leftarrow 4$
 $\leftarrow 9$
 $\leftarrow (layer)^2 = this.layer.sum()$

$$\therefore S(stack) =$$

$$\sum_{k=1}^{layer} (layer)^2$$

$$\Leftrightarrow \frac{n(n+1)(2n+1)}{6}$$

Tetrahedral Number



$$\therefore S(stack) =$$

$$\sum_{k=1}^n \left(\sum_{i=1}^k i \right)$$

\Rightarrow sub-layer 2A $\leftarrow 1$
 $k=2$ 2B $\leftarrow 2$

$$\Leftrightarrow \frac{n(n+1)(n+2)}{6}$$

\Rightarrow sub-layer 3A $\leftarrow 1$
 $k=3$ 3B $\leftarrow 2$ 3C $\leftarrow 3$

$$\sum_{i=1}^k i \quad (\forall k = \text{current layer})$$