Through Points on 3 and 2 Faces of a Triangular Pyramid respectively

Piyush Goel

Abastract:

This came into existence when one day (10 -12 years back), all of a sudden I draw a line and divided the
line into same segment and draw one more line above the previous line and mark the points on the both
lines and magically I got a triangle (while attach all the points with each other), with at point 1 no of
points 1 at 2 no of points 3 and at 3 no of points 5.
Now an idea born into my mind while I should not expand it more and I got Amazing Result which is in
front of All Mathematics Lovers.

My Motto: Whatever I have is not of mine it is of whole world, given to me by God.

About The Author

Piyush Goel born on 10th February, 1967, Aquarian, belongs to a middle class family, elder son of father
Dr. *Devender Kumar Goel* and **mother Ravikanta Goel**. He is Diploma Mechanical Engineering, Diploma in Material Management, Diploma in Vastu Shastra and Diploma in Business Management. Creative,
believe in God, believe in Love & Friendship.
Piyush Goel has written **Bhagwad Gita in *Mirror Image*. Piyush** says, It is the ***World First Bhagwad Gita***in the World written in **Mirror Image**. He wrote the epic in **Two Languages**, **Hindi and English**.He is known as **Mirror Image Man**".He has Hand **Written *Mirror Image* Books with *Pen, Needle, Mehndi***
***Cone*, with *Iron Nail*, with *Fabric Cone Liner, Carbon Paper, Wooden Pen and Ink*.**From 2003 to 2015
Piyush Goel has completed **15 Spiritual and World Fame Books** with his own hands in Mirror Image in
Different Ways .

1. Shreemad Bhagvad Gita in Hindi Language. -----Pen
2. Shreemad Bhagvad Gita in English Language.----Pen
3. Shree Durga Saptsatti in Sanskrit Language.----Pen
4. Shree Sai Satcharitra in Hindi Language.-----Pen
5. Shree Sai Satcharitra in English Language.-----Pen
6 &7.Sunder Kand (2 times).----Pen
8. Shree Ram Charit Manas (only Doha, Sorte and Chaupai).----- Pen
9. Madhushala of Late Harbans Rai Bachchan.---------Needle
10. Gitanjali of Rabindra Nath Tagore.----------Mehndi Cone
11. Piyush Vani of Piyush Goel on Aluminium Sheet.---------Iron Nail
12. Piyush Vani of Piyush Goel on Transparent Sheet.-------- Fabric Cone Liner
13. Panchtantra of Vishnu Sharma on A-4 White Paper.---------Carboon Paper
14. Meri 51 Kavitain of Shri Atal Bihari Vajpayee -------on Magic Sheet with the help of Wooden Pen

15. Chankya Niti---- Handmade Wooden Pen.

Prove: $N^3 = N(3N-2) + N(N-1)(N-2)$ or $N^2 = N(2N-1) - N(N-1)$

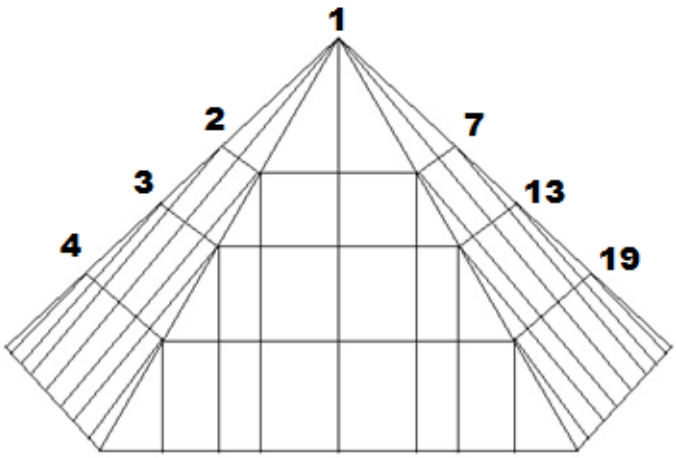

Figure: 1

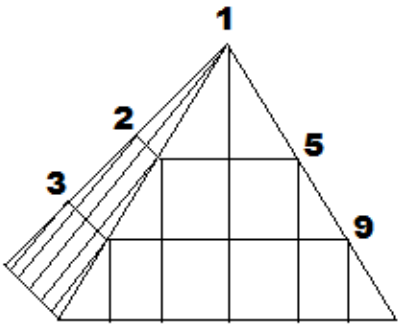

Figure: 2

It's a new method to find nth power of a number. Here we'll take examples to find Square & Cube of a number through Points marked on 2 faces & 3 faces of a Triangular Pyramid respectively.

Firstly, we are finding **cube** of a number.

1. We take 3 Pyramid faces and mark the Left Side with 1, 2, 3, 4,.....so on.
2. And on the Right Side we are taking the sum of points as shown in Figure-1.

By the Numbers of Points on The Three Faces of a "PYRAMID" in the above Figure-1

We shall prove $N^3 = N(3N-2) + N(N-1)(N-2)$**.**

Now

In Figure-1

At Point	No Of Points
1	1
2	7
3	13
4	19
5	25

No of Points **(1, 7, 13, 19, 25.....)** , It is an **A.P Series**.

If we do **$1^3 = 1 + (1*0*.....)$**

$2^3 = (1+7) + (2*1*0) = 8$

$3^3 = (1+7+13) + (3*2*1) = 21 + 6 = 27$ and so on

$N^3 = (N/2)[2a+(N-1)*d] + C(N,3)$

Putting the value a=1 & d=6, we get

N^3=(N/2)[2*1+(N-1)*6] + C(N,3)

=(N/2)[2+6N-6] + C(N,3)

=(N/2)[6N-4] + C(N,3)

=N(3N-2) + N(N-1)(N-2)

N^3 =N (3N-2) + N (N-1) (N-2) (Hence Proved)

Secondly, we are finding Square of a number.

1. We take 2 Pyramid faces and mark the Left Side with 1, 2, 3, 4,…….so on.
2. And on the Right Side we are taking the sum of points as shown in Figure-2.

By the Numbers of Points on The Two Faces of a "PYRAMID" in the above Figure-2 .

We shall prove N^2=N (2N-1) –N (N-1).

Now

In Figure-2

At Point	No Of Points
1	1
2	5
3	9
4	13
5	17

No of Points **(1, 5, 9, 13, 17……)** , It is an **A.P Series**.

If we do

1^2 =1 - (1*0)

2^2 = (1+5) - (2*1) = 6 – 2 =4

3^2= (1+5+9) - (3*2) =15 - 6 = 9

4^2= (1+5+9+13) - (4*3) =28 - 12 = 16

N^2=(N/2)[2a+(N-1)*d] - C(N,2)

Putting the value a=1 & d=4, we get

N^2=(N/2)[2*1+(N-1)*4] - C(N,2)

=(N/2)[2+4N-4] - C(N,2)

=(N/2)[4N-2] - C(N,2)

=N(2N-1) - N(N-1)

Hence, N^2=N (2N-1) –N (N-1).