

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

### **Abstract:**

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.

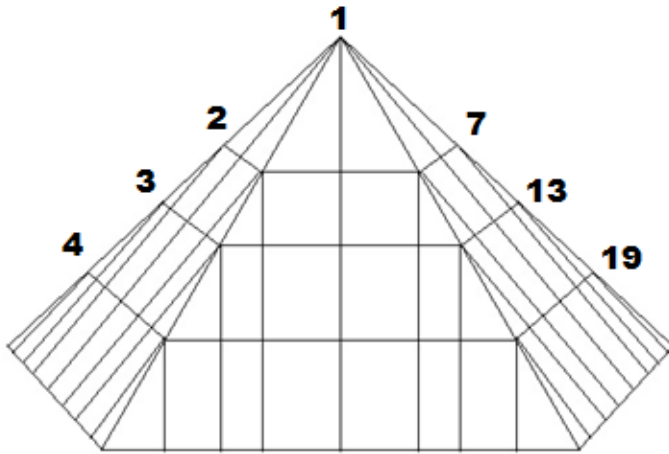
**Piyush Goel** has written **Bhagwad Gita in Mirror Image**. **Piyush** says, "It is the **World First Bhagwad Gita** in the World written in **Mirror Image**. He wrote the epic in **Two Languages, Hindi and English**. One can read all the 18 chapters and 700 verses in front of a mirror." The feat certainly shows the will power of a man who put everything readable in front of a mirror. He says, "Since my childhood I had a strong desire to copy everything in front of a mirror. Though I was not sure to achieve this uncommon art, yet I did it." He recalled how an accident had changed his life. I met with a serious accident in year 2000 and remained in bed for a long time. At that time I had developed this art, he reveals. **Piyush Goel** is now 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 Sapsatti 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

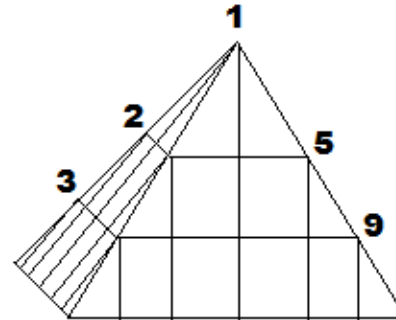
11. Piyush Vani of Piyush Goel on Aluminium Sheet.-----Iron Nail
12. Piyush Vani of Piyush Goel on Transparent Sheet.----- Fabric Cone Liner
13. Panchtantra of Vishnu Sharma on A-4 White Paper.-----Carboon Paper
14. Meri 51 Kavita of Shri Atal Bihari Vajpayee -----on Magic Sheet with the help of Wooden Pen.
15. Chankya Niti---- Handmade Wooden Pen.

<http://www.piyushgoel.in/>

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



**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  $1^3 = 1 + (1*0*.....)$

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

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

$$N^3 = \frac{N}{2}[2a + (N-1)*d] + C(N,3)$$

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

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

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

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

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

$$N^3 = N(3N - 2) + N(N-1)(N-2) \quad \text{(Hence Proved)}$$

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,  $N^2 = N(2N-1) - N(N-1)$ .**