**SUM Formula for numbers from 1 to N**

**Sum(1🡪N) = (6.5 + 6 \* i) \* 12 \* (i + 1) where i = (N/12) -1**

**For any natural number N**

Sum formula of infinite series

Z(-1) = 1+2+3+4+5+6+7+8+9+10+11+……..

1. Divide both sides by 12
2. Add every 12 term together in 3 groups of 4 numbers.

= (1+2+3+4)/12 + (5+6+7+8)/12 +(9+10+11+12)/12 +

+ (13+14+15+16)/12 + (17+18+19+20) /12+ (21+22+23+24)/12

+(25+26+27+28)/12 + (29+30+31+32) /12+ (33+34+35+36)/12

+(37+38+39+40)/12 +(41+42+43+44) /12+ (45+46+47+48)/12

+….

1. Simplify every three group together

= (1-1/6) + (2+1/6) + 3.5+

+(5-1/6) + (6+1/6) + 7.5+

+(9-1/6) + (10+1/6) + 11.5+

+(13-1/6) + (14+1/6) + 15.5+

+…….

1. Add every three terms together

= 6.5 +18.5+30.5+42.5+54.5+….

1. This is 6.5 with incremental step of 12, Based on this

First 12 terms sum = 6.5 \* 12

Second 12 terms sum = 18.5 \* 12

Third 12 terms sum =30.5 \* 12 and so on…...

Now to get a formula

for first 12 terms 🡪 index I = 0 🡪 Sum = 6.5 \* 12 = 78

for second 12 terms🡪 index I =1 🡪 sum = 18.5 \* 12 = 222

for third 12 terms 🡪 index I =2🡪 sum = 30.5 \* 12 = 366

and so on……

i=0 🡪 6.5 at 12 terms = (6.5 +6i) \* 12

i=1 🡪 18.5 at 24 terms = (6.5 +6i) \* 24

i=2🡪 30.5 at 36 terms == (6.5 +6i) \* 36

i=3🡪 42.5 at 48 terms = (6.5 +6i) \* 48

i=4🡪 54.5 at 60 terms = = (6.5 +6i) \* 60

………

Sum at i = (6.5 + 6 i) \* 12 \* (i+1)

Then revers the value of N terms from index I value

N = (i +1) \* 12

**SUM Formula for numbers from 1 to N**

**Sum(1🡪N) = (6.5 + 6 \* i) \* 12 \* (i + 1) where i = (N/12) -1**

**For any natural number N**