Coding & Decoding

- Letter - Letter coding
- Letter - Number coding
- words coding
- Statement coding

Letter - Letter coding :-

DELHI is coded as EFMIJ.

what is the code for PUNE ?

(+1, +1, +1, +1 - -)

② ACE is coded as BEH.

GATE → ?

HCWI

(+1, +2, +3, +4 - -)

③ TABLE → ATBEL

chair → ? chari

④ PSU → KHF

BSNL → ? YHMO (A−Z, Z−A)

⑤ Drink is coded as EQJMI

water → ?

xzvds

(+1, −1, +1, −1 ...)

Type 2:- Letter - number Coding

GATE ⟶ 7-1-20-5

IES ⟶ ?

9-5-19

(Letter's number)

PSU → 16-21-15-17-18

BSNL → ?

19 17

1-17-11-8

logic (-1, -2, -3, -4 ---)

2+15+15+11

BOOK = 43

PEN = ?

16+5+14 = 35

Sum of the Letter's Number

17. If E = 10; J = 20; O = 30; and T = 40, what will be P + E + S + T? **(GATE - 2019)**

(a) 120
(b) 164
(c) 82
(d) 51

Double of the letter's number

19. If AT = 20, BAT = 40, Then CAT will be equal to

1×20 2·1·20 3·1·20

(a) 30 (b) 50

(c) 60 (d) 70

product

1 18 15 13 1 11 23 1 12 9 20 25

20. If AROMA = 24, GRAND = 22, KWALITY = ?

(a) 40 (b) 62

(c) 55.5 (d) 50.5

48/2 = 24

add/2

(Q) Book - PEN = 8

43 35

PEN - NIB = ?

35 25 10

(Q) Book = 172 (43 × 4 = 172)

PEN = 105 (35 × 3 = 105

INK = ? (34 × 3 = ?

9
14
11

(Q) BSNL → 25 - 8 - 13 - 15

ORDO → ? 23 - 9 - 23 - 12

opposite letter's number.

ACE
Since 1995

Type 3: Statement Coding :-

→ White → Black

Black → Red

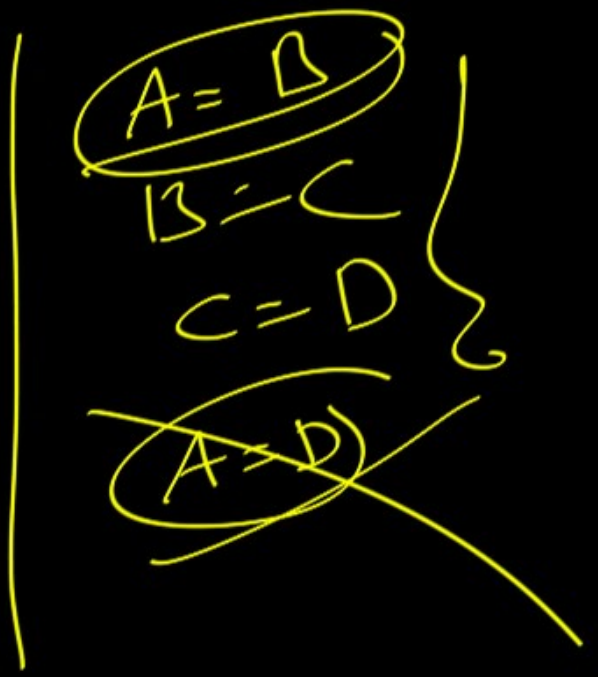
Red → pink

pink → green

green → yellow.

In that Language, what is Colour of Blood ?

(Red) → pink



09. If ROOM is called BED, BED is called WINDOW, WINDOW is called FLOWER and FLOWER is called COOLER, on what would a man sleep?

(a) WINDOW (b) BED

(c) FLOWER (d) COOLER

10. If SAND is called AIR, AIR is called PLATEAU, PLATEAU is called WELL, WELL is called ISLAND and ISLAND is called SKY, then from where will a woman draw water?

(a) WELL (b) ISLAND

(c) SKY (d) AIR

E

11. If SKY is called SEA, SEA is called WATER, WATER is called AIR, AIR is called CLOUD and CLOUD is called RIVER, then what do we drink when thirsty? (water → AIR)

(a) SKY
(b) AIR
(c) WATER
(d) SEA

Key:- words coding:-

- They are fools → plane is Risky
- We are wise → Train is fast
- Wise never fools → Fast always Risky.

→ Train → ? We

→ Risky → ? fools

12. In a certain code, 'nee tim see' means 'how are you'; 'ble nee see' means 'where are you', what is code for 'where'?

(a) nee
(b) tim
(c) see
(d) ble

13. In certain code language, '851' means 'good sweet fruit', '783' means 'good red rose' and '341' means 'rose and fruit'. Which of the following digit stands for 'sweet' in that language?

(a) 8
(b) 5
(c) 1
(d) 3

Ages

2- remember points.

① Ages Ratio is given ⟶ A : B : C = 5 : 7 : 8

5x, 7x, 8x

P : F → 3 : 5

↓

3x, 5x

Ages become

② Ages Ratio not given, then $\left.\begin{matrix} A=x \\ B=y \\ C=z \end{matrix}\right\}$ Let

{ hence / After / ⟶ from the Present
  ago / before / last ⟶ " " "

Q) The Present ages Ratio of P & Q is 5:7. The Ages difference b/w Q's present age and P's age after '6' years will be "2" years. Find Sum of present ages of P&Q Together?

P:Q = 5:7 → 5x, 7x

Q − (P+6) = 2

7x − (5x+6) = 2

7x − 5x − 6 = 2

2x = 8

x = 4

Sum of (P+Q)

⇒ 12x

= 12(4) = 48 ✓

(3-Times in Govt Jobs.)

A person was asked to state his age in years. His reply was, "Take my age three years hence, multiply it by 3 and then subtract three times my age three years ago and you will know how old I am. What was the age of the person (years)?

(a) 18 (b) 20 (c) 24 (d) 32

$3(x+3) - 3(x-3) = x$

$3x + 9 - 3x + 9 = x$

$x = 18$

The ratio between the present ages of A and B is 5: 3 respectively. The ratio between A's age 4 years ago and B's age 4 years hence is 1: 1. What is the ratio between A's age 4 years hence and B's age 4 years ago?

(a) 1: 3
(b) 2: 1
(c) 3: 1
(d) 4: 1

$A : B = 5 : 3 \; (5x, 3x)$

$5x, \quad 3x$

$-4 \downarrow \quad \downarrow +4$

$5x-4 : 3x+4 = 1 : 1$

$5x-4 = 3x+4$

$2x = 8$

$x = 4$

$A = 5(4) = 20$

$B = 3(4) = 12$

$20 \quad 12$

$+4 \downarrow \quad \downarrow -4$

$24 : 8$

$3 : 1$

03. Hema's age is 5 years more than twice Hari's age. Suresh's age is 13 years less than 10 times Hari's age. If Suresh is 3 times as old as Hema, how old is Hema? **(GATE)**

(a) 14 (b) 17 (c) 18 (d) 19

$h = 2hari + 5$

$Sur = 10\,hari - 13$

$Sur = 3(hema)$

$3[2hari + 5] = 10\,hari - 13$

$6\,hari + 15 = 10\,hari - 13$

$4\,hari = 28$

$\boxed{hari = 7}$

$hema = 2(7) + 5 = 19$ years

04. Six years ago, the ratio of the ages of Kunal and Sagar was 6: 5, Four years hence, the ratio of their ages will be 11: 10. What is Sagar age at present (years) is:

(a) 10 (b) 12 (c) 16 (d) 14

6 yr ago

K : S = 6 : 5

6x, 5x

Present => 6x+6, 5x+6

4 yr hence

6x+10 : 5x+10 = 11:10

$60x + 100 = 55x + 110$

$5x = 10$

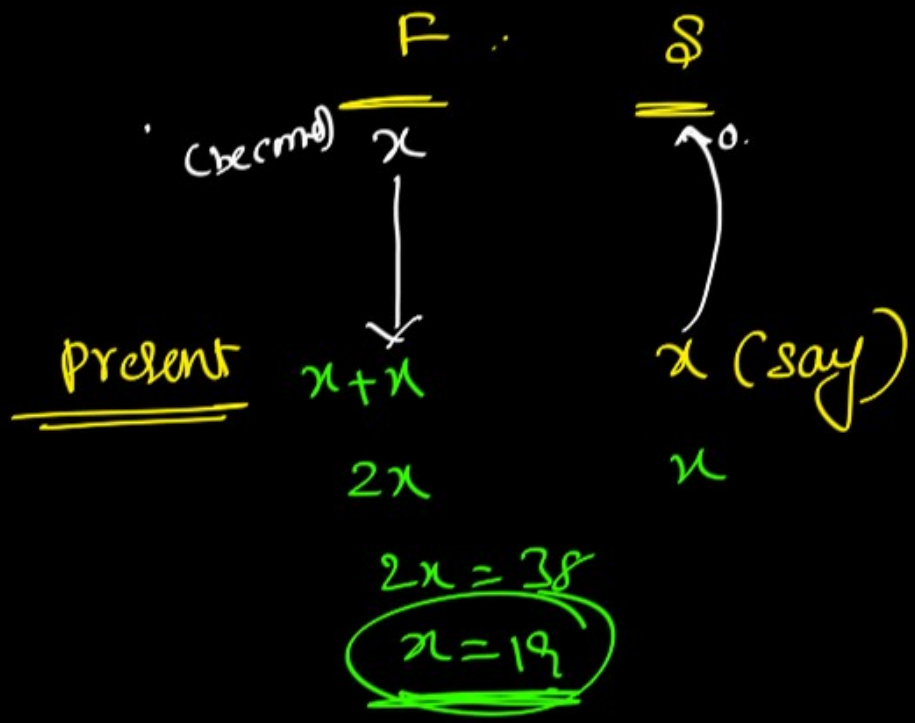
$x = 2$

Sagar = $5x + 6 = 5(2) + 6$

$= 16$

05. A father said his son, "I was as old as your are at present at the time of your birth." If the father age is 38 now, the son age 5 years back was:

(a) 14 (b) 19 (c) 33 (d) 38



Son's 5 yr back

19 - 5 = 14

Analytical figures

5^2 4^2 3^2 2^2 1^2

no of Squares:-

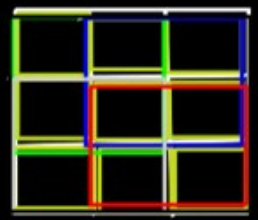
$$\sum n^2 = \frac{n(n+1)(2n+1)}{6} \Rightarrow \frac{5(5+1)(11)}{6}$$

$$= 55 \text{ //} \checkmark$$

$$\boxed{\sum m \times n}$$

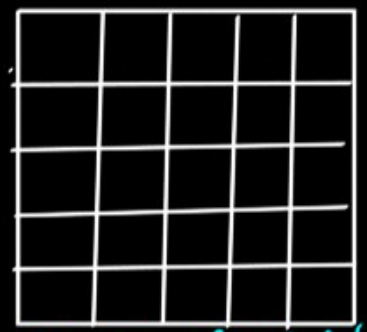
$2^2 + 1^2$

(5) ✓



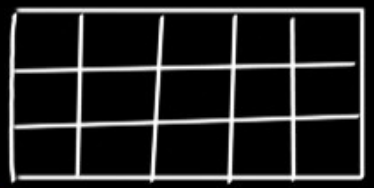
$3^2 + 2^2 + 1^2 + 0^2$ ✗

(14) ✓



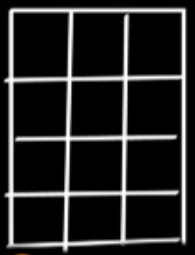
$5^2 + 4^2 + 3^2 + 2^2 + 1^2$ ✓

$\Rightarrow$ 55



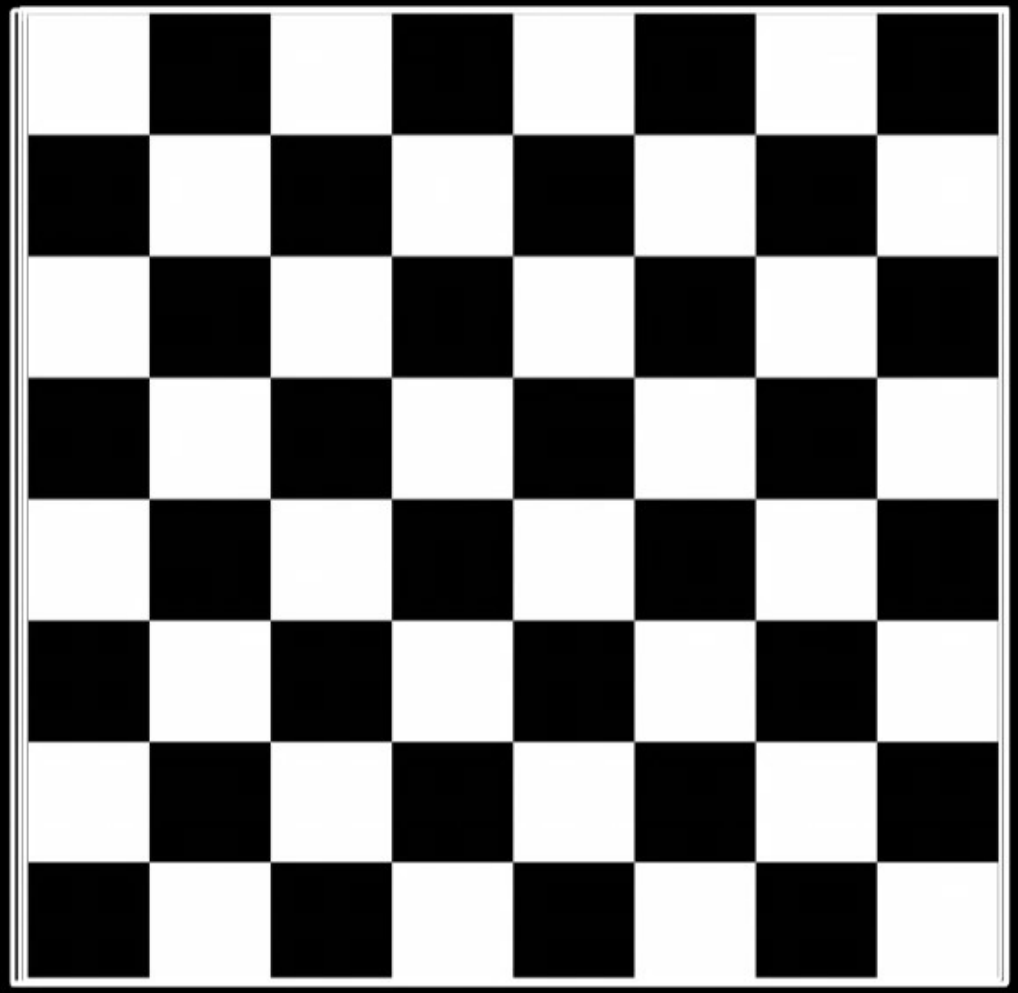
$(3 \times 5) + (2 \times 4) + (1 \times 3) + (0 \times 2)$

$\Rightarrow 15 + 8 + 3 = (26)$



$(4 \times 3) + (3 \times 2) + (2 \times 1) + (1 \times 0)$

$\Rightarrow 12 + 6 + 2 = 20$

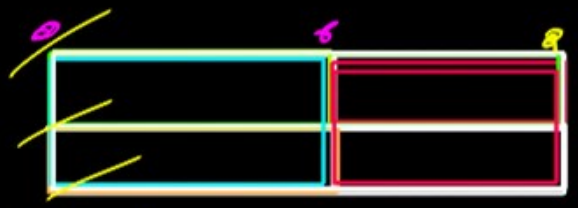


$\sum 8^2$

204

no of Rectangles:-

$$^mC_2 \times {}^nC_2$$



$m = 3$

$n = 3$

$^3C_2 + {}^3C_2$

$\Rightarrow 3 \times 3$

$= 9$ ✓

$m = 4$

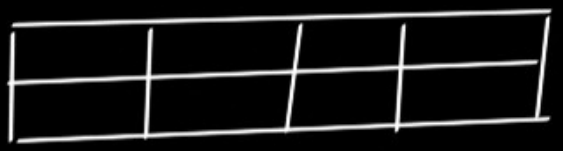
$n = 6$

$^4C_2 \times {}^6C_2$

$\frac{4 \times 3}{2 \times 1} \times \frac{6 \times 5}{2 \times 1}$

$= 90$

Gedel



$\Rightarrow m = 3$

$n = 5$

$^3C_2 \times {}^5C_2$

$\frac{3 \times 2}{2 \times 1} \times \frac{5 \times 4}{2 \times 1}$

$= 30$ ✓

m = no of horizontal lines

n = no of Vertical lines

$$n_{C_r} = \frac{n!}{(n-r)!\,r!}$$

$$n_{C_r} = {}^{n}C_{n-r}$$

$$n_{C_n} = 1$$

$$n_{C_0} = n$$

$${}^{5}C_2 = \frac{5!}{(5-2)!\,2!}$$

$${}^{5}C_2 = {}^{5}C_3$$

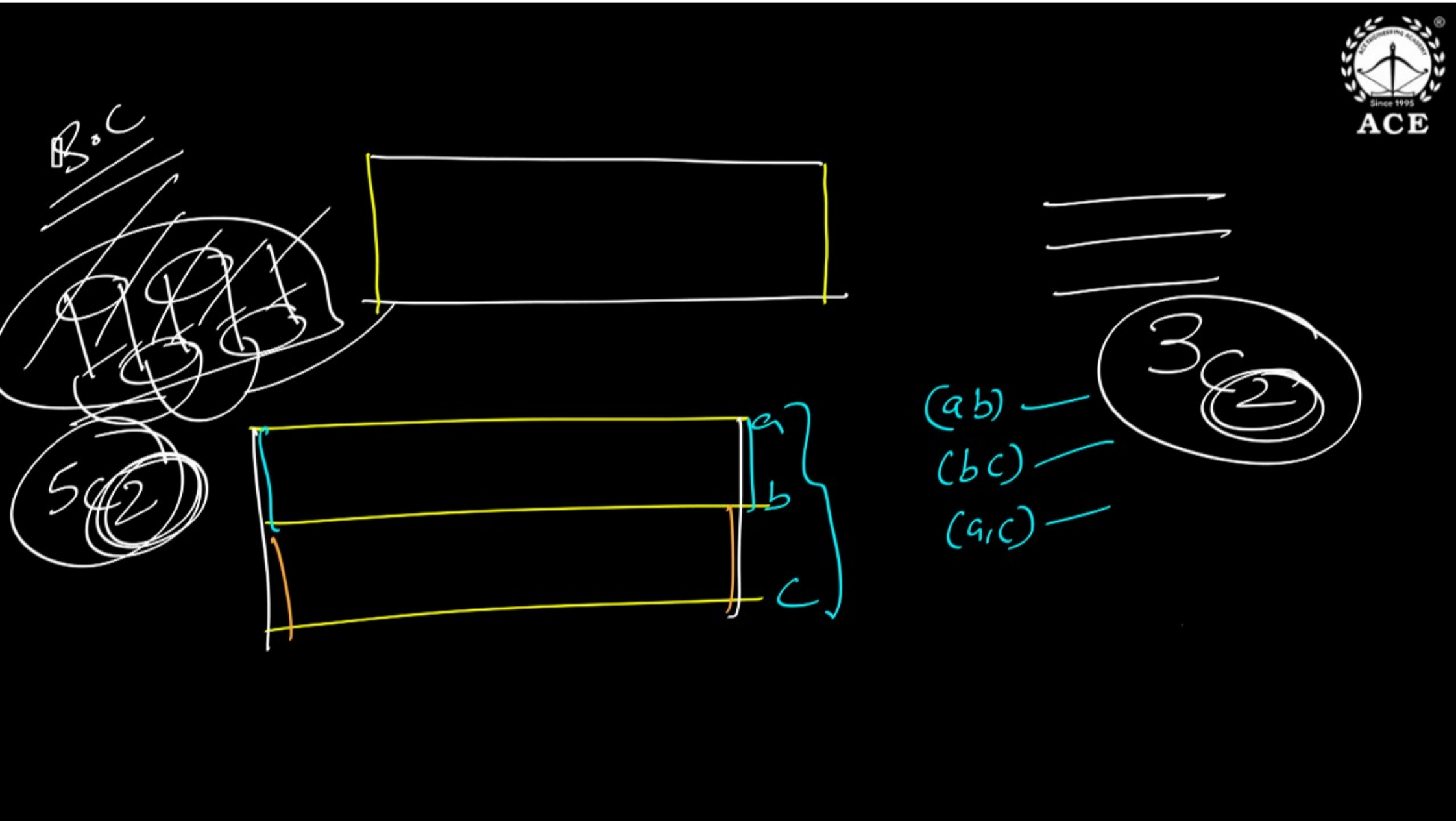
$${}^{6}C_2 = \frac{6\times5}{2\times1}$$

$${}^{10}C_2 \Rightarrow \frac{10!}{(10-2)!\,2!}$$

(8)

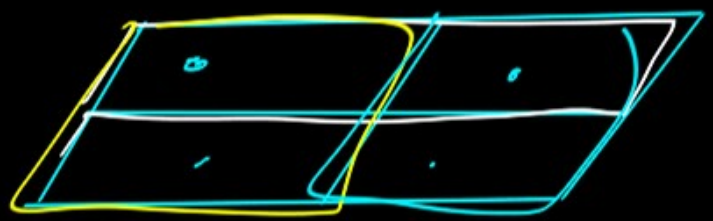
$$\frac{10\times9}{2\times1}$$

$$7C_3 = \frac{7 \times 6 \times 5}{3 \times 2 \times 1}$$


B.C
5C2
a
b
c
(a b)
(b c)
(a,c)
3C2

no of Parallelograms:- (2019)

$^mC_2 \times {}^nC_2$

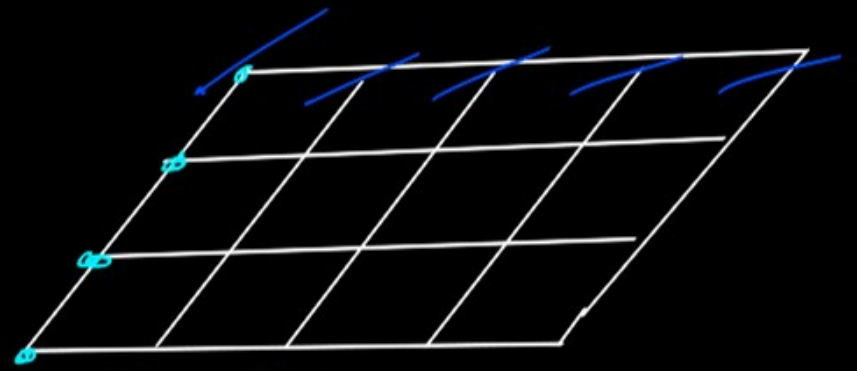


$^3C_2 \times {}^3C_2$

3×3

$\Rightarrow 9$

$\Rightarrow$



$m = 4$

$n = 5$

$$^4C_2 \times {}^5C_2 = \frac{4\times3}{2\times1} \times \frac{5\times4}{2\times1}$$

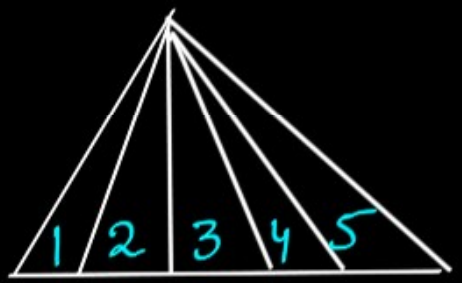
$$= 60$$

no of Δ'es :—

I

= 1

1+2=3 //



1+2+3+4+5= 15

S.C (Σn)

II

S.C (Σn) x no of paths

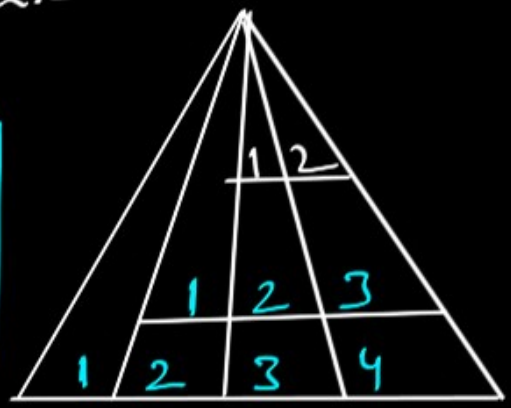
(1+2) x 2

= 6

3 + 3 = 6

(1+2+3+4+5) x 3

45



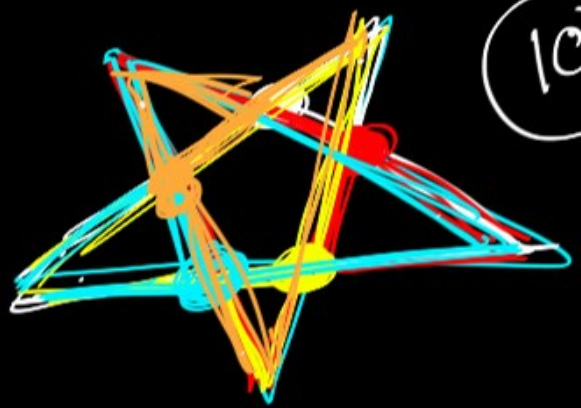
(1+2+3+4)

+ (1+2+3)

+ 1+2

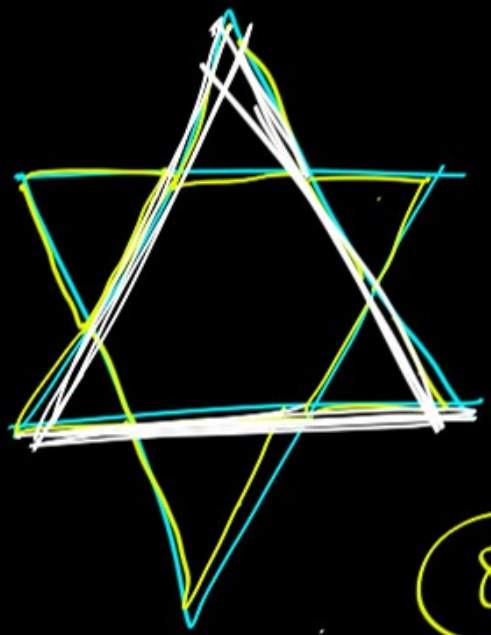
⇒ 19

III no of Triangles form (5 stars) :-



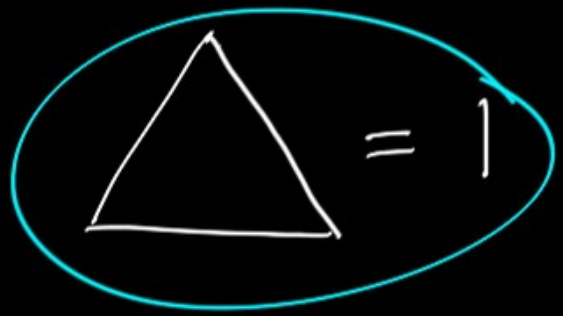
10

$S(2) = 10$

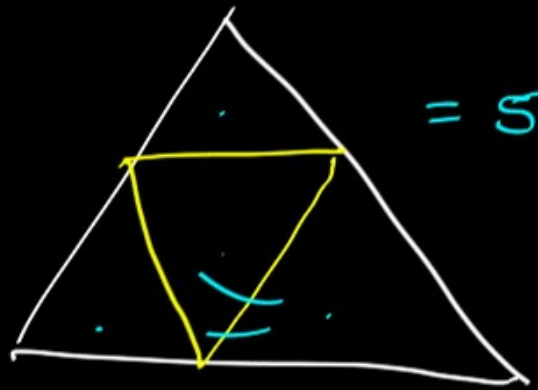


8

IV

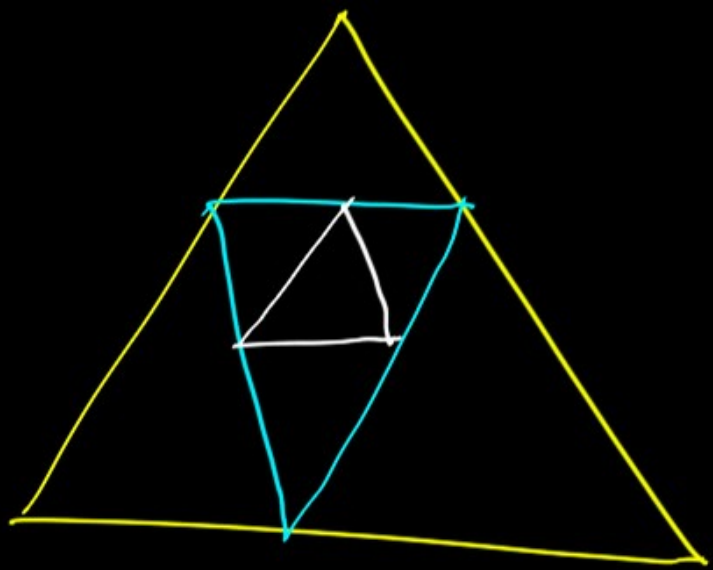


S.C 4n-3



1+4

5



1+4+4=9

1+4+4+4 = 13

$4(1)-3 = 1$

$4(2)-3 = 5$

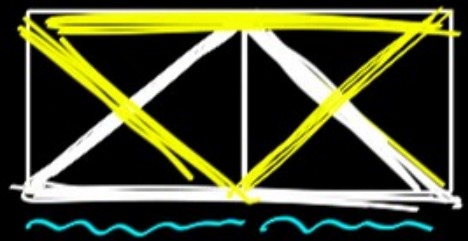
$4(3)-3 = 9$

$4(4)-3 = 13$

(r)

(8)

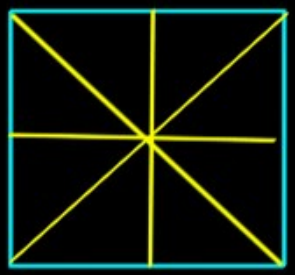
(8)

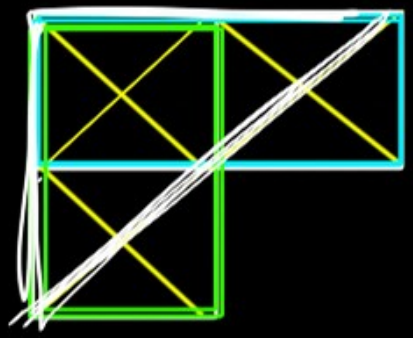


8+8+2 = 18

(10)

(16)



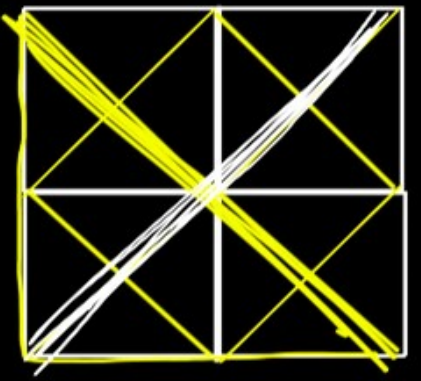


8+8+8

2+2

+1

29

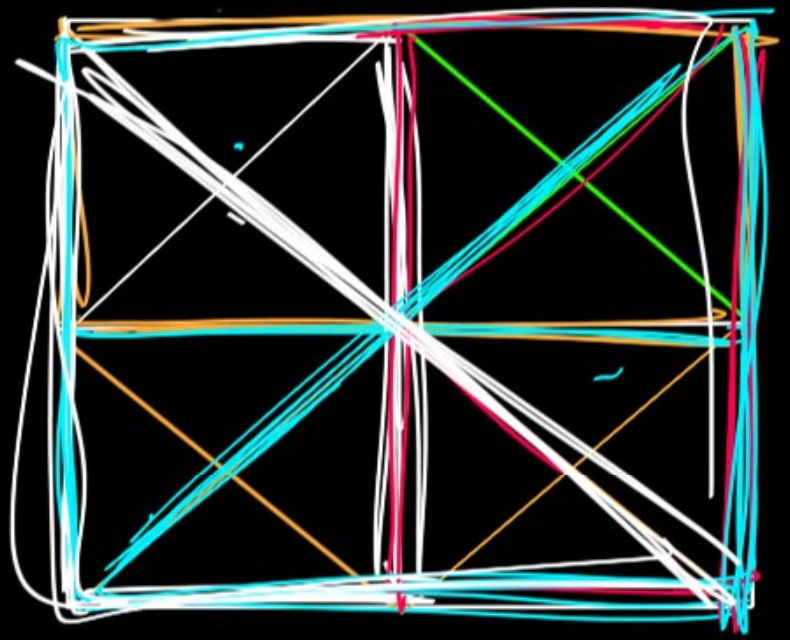


8+8+8+8

2+2+2+2

4

44



$8+8+8+8$

$2+2+2+2$

4

44