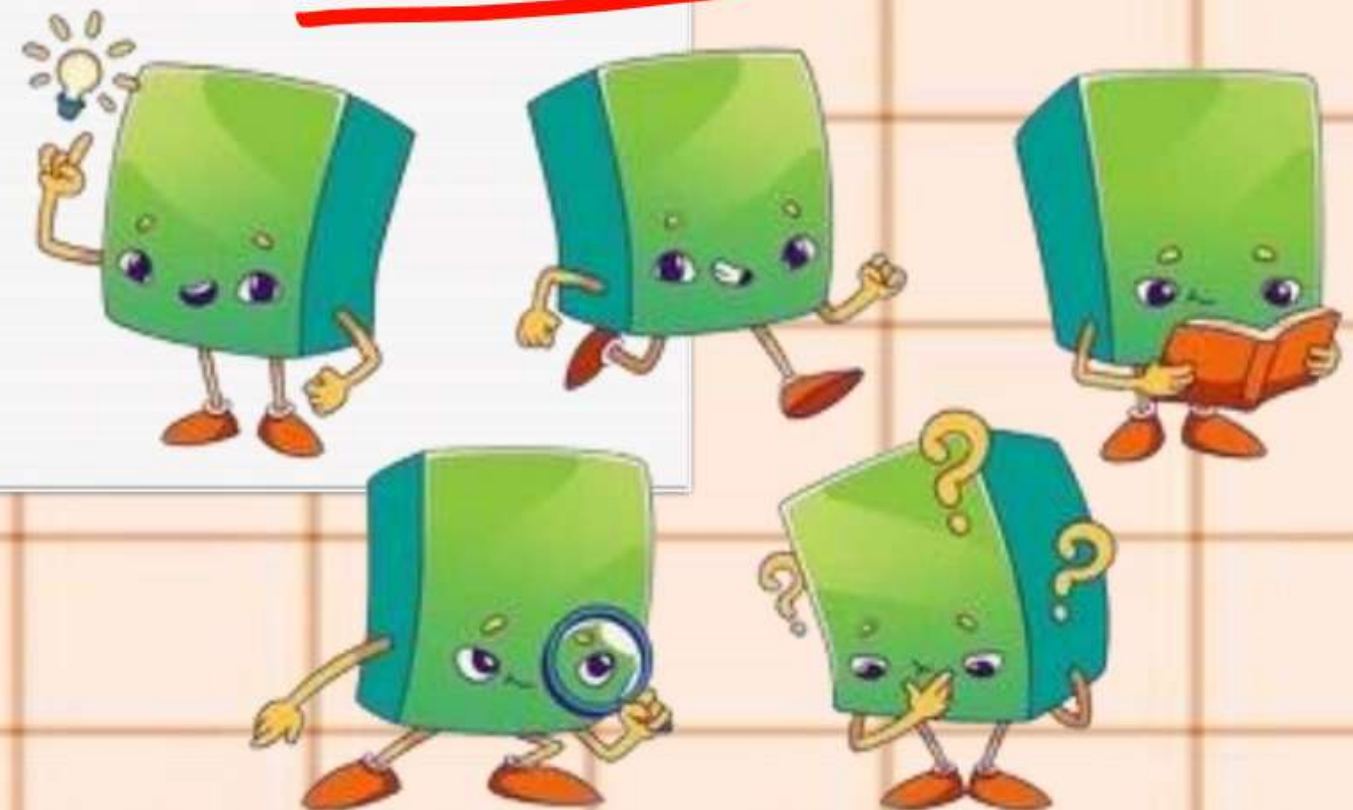


CUBE & ✓ CUBOID

Basics

3D orientation
Visualization



① कोने $\rightarrow 8$
तीन सतह Visible

② किनारे $\rightarrow 12$
Edges

$$12(4-2) = 12 \times 2 = 24$$

2 सतह Visible

③ Faces
फलक

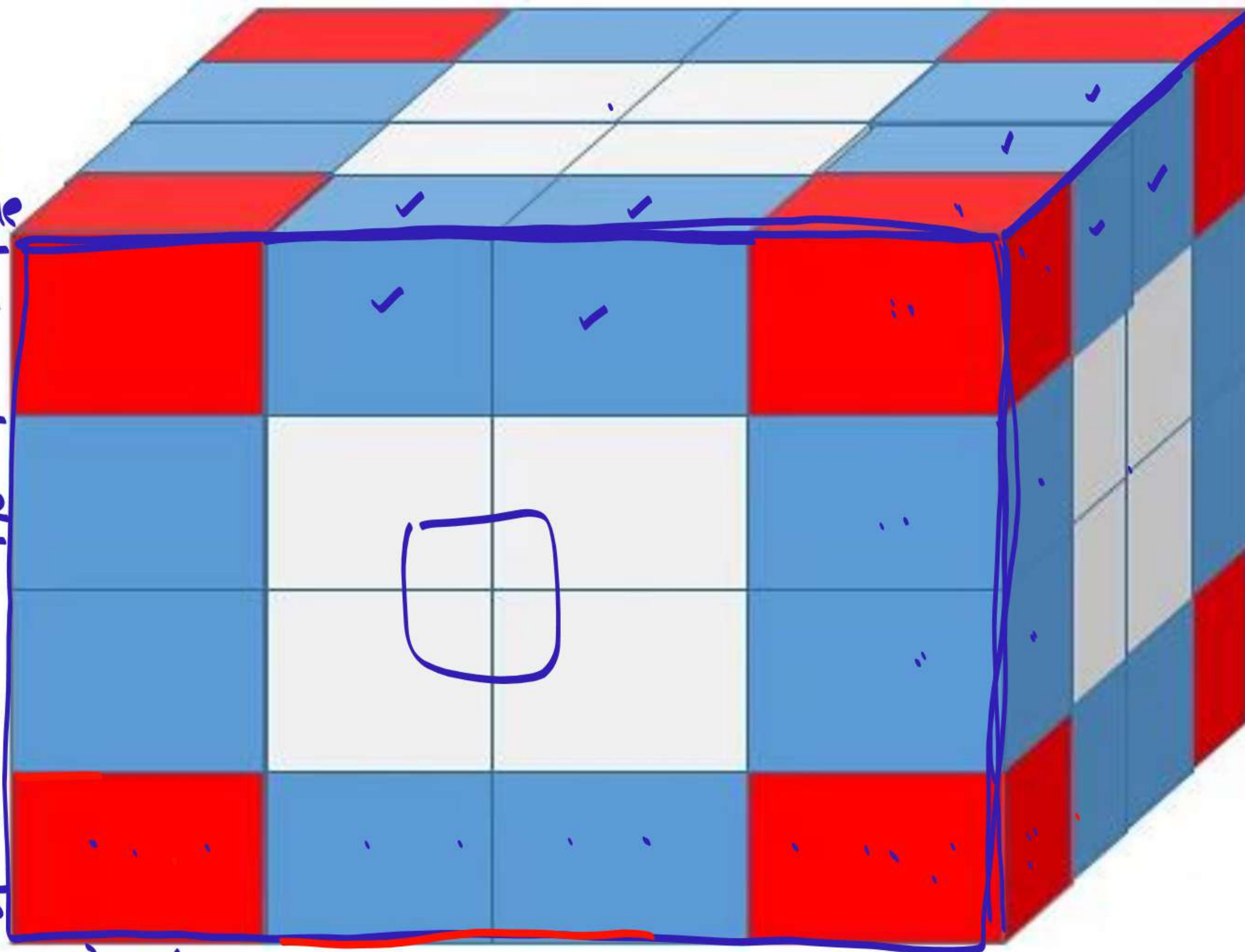
$$(4-2)^2 = 2^2 = 4$$

फलक $\rightarrow 6$

$$\text{total} = 6 \times 4 = 24$$

④ अन्दर $(4-2)^3$

$$2^3 = 8$$



$$8 + 24 + 64 = 96$$

छोटे घनो की संख्या

$$4 \times 4 \times 4$$

$$l = b = h = N$$

$$N \times N \times N$$

$$N=4$$

$$4 \times 4 \times 4$$

64 छोटे घन (Smaller cubes)

3 सतह बाहर

↓
कोनों पर
Corners

8

2 सतह बाहर

↓
किनारों पर Edges

$$12 \times 2 = 24$$

Formula

1 सतह बाहर

↓
फलक Faces

$$6 \times 2^2 = 24$$

फॉर्मूला

0 सतह बाहर

↓
अंदर (Inside)

$$2^3 = 8$$

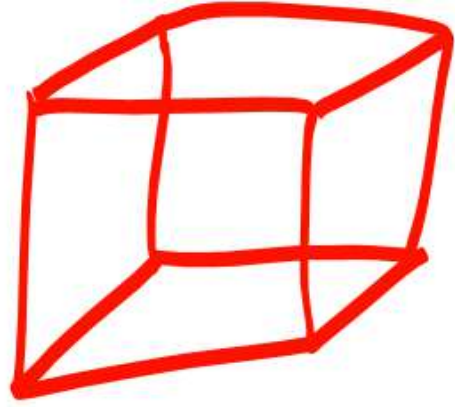
कोने
8

किनारे
 $12(N-2)$

$$6(N-2)^2$$

$$(N-2)^3$$

$$Cut \rightarrow 3(N-1)$$



$$\begin{array}{c}
 \begin{array}{c} 1 \\ \downarrow \\ 5 \end{array} \times \begin{array}{c} 6 \\ \downarrow \\ 5 \end{array} \times \begin{array}{c} 1 \\ \downarrow \\ 5 \end{array} \rightarrow \text{Cut} \\
 N \times N \times N \rightarrow N^3 = 6^3 = 216
 \end{array}$$

$$N=6$$

3 faces

$$8$$

2 faces

$$12(N-2)$$

$$12(6-2) = 12 \times 4 = 48$$

1 surface
1 faces

$$6(N-2)^2$$

$$6(6-2)^2 = 96$$

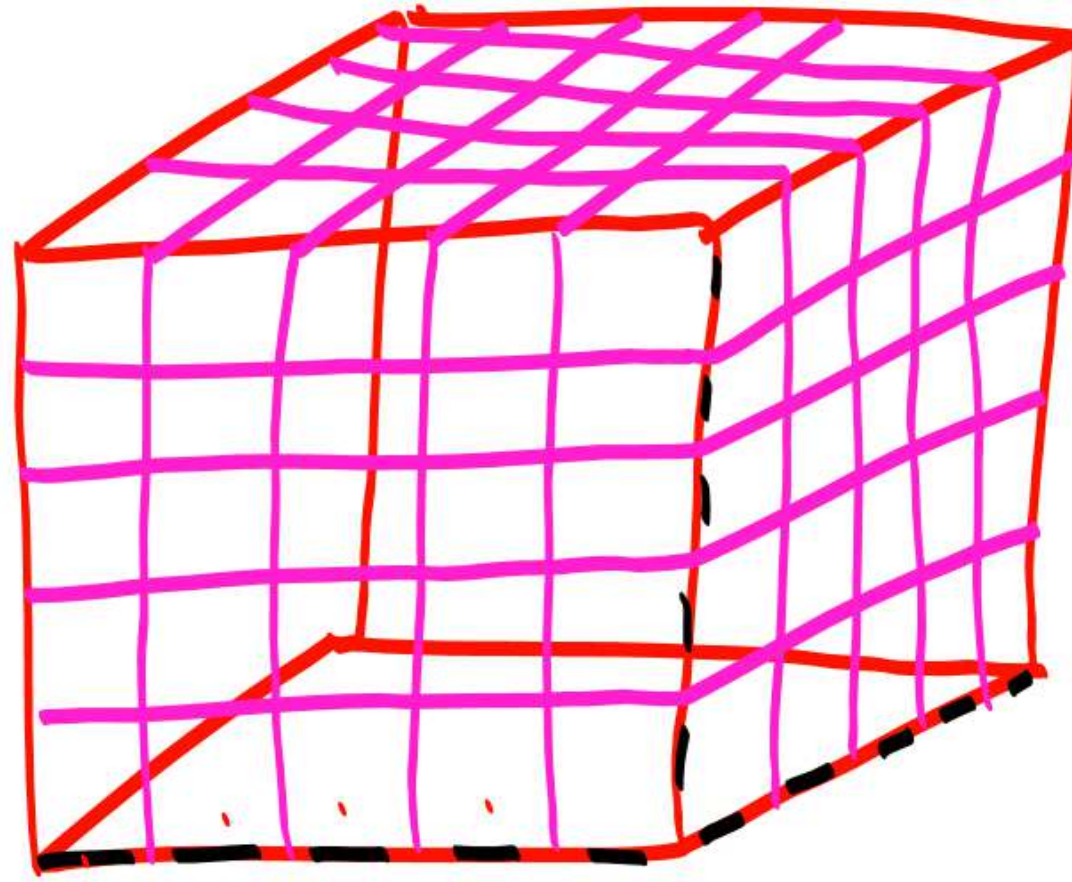
0 surface

$$(N-2)^3$$

$$(6-2)^3$$

$$4^3 = 64$$

$$\text{Total cut} \rightarrow 3(N-1) = 3(6-1) = 15$$



$$\text{Cut} \rightarrow \underline{4+4+4=12} \checkmark$$

$$\underset{N}{5} \times \underset{N}{5} \times \underset{N}{5} = 125$$

3 सतह

8

2 सतह

$$12(N-2)$$

$$12(5-2) = 12 \times 3 \\ = 36$$

1 सतह

$$6(N-2)^2$$

$$6(5-2)^2 = 6 \times 3^2 \\ = 54$$

0 सतह

$$(N-2)^3$$

$$(5-2)^3 = 3^3 \\ = 27$$

$$\text{Cut} = 3(N-1) = 3(5-1) = 12 \checkmark$$

3 સતર રંગીન કોને	2 સતર રંગીન $12(N-2)$	1 સતર રંગીન $6(N-2)^2$	Cube type $N \times N \times N$ $2 \times 2 \times 2 = 8$	Cut (કટ) $3(N-1)$	0 સતર રંગીન Non painted cube $(N-2)^3$
8				$3(2-1) = 3$	0
8	$12(3-2) = 12$	$6(3-2)^2 = 6 \times 1^2 = 6$	$N=3$ $3 \times 3 \times 3 = 27$	$3(3-1) = 6$	1 $(3-2)^3 = 1^3$
8	$12(4-2) = 12 \times 2 = 24$	$6(4-2)^2 = 6 \times 2^2 = 24$	$N=4$ $4 \times 4 \times 4 = 64$	$3(4-1) = 9$	8 $(4-2)^3 = 2^3$
8	$12(5-2) = 12 \times 3 = 36$	$6(5-2)^2 = 6 \times 3^2 = 54$	$N=5$ $5 \times 5 \times 5 = 125$	$3(N-1) = 3(4) = 12$	27 $(5-2)^3 = 3^3 = 27$
8	$12(6-2) = 48$	$6(6-2)^2 = 6 \times 4^2 = 96$	$N=6$ $6 \times 6 \times 6 = 216$	$3(6-1) = 15$	64 $(6-2)^3 = 4^3 = 64$
8	$12(7-2) = 60$	$6(7-2)^2 = 6 \times 5^2 = 150$	$N=7$ $7 \times 7 \times 7 = 343$	$3(7-1) = 18$	125 $(7-2)^3 = 5^3 = 125$

0 सतह रंगीन
colorless
 $(N-2)^3 = (5-2)^3 = 3^3$
 $= 27$

$$5 \times 5 \times 5 = 125$$

$$N = 5$$

8

↓

3 सतह रंगीन
हरा

$$12(5-2)$$

$$\underline{36}$$

2 सतह
हरा Color

$$6(N-2)^2$$

$$6(5-2)^2$$

$$\underline{54}$$

↓
Pink Color

