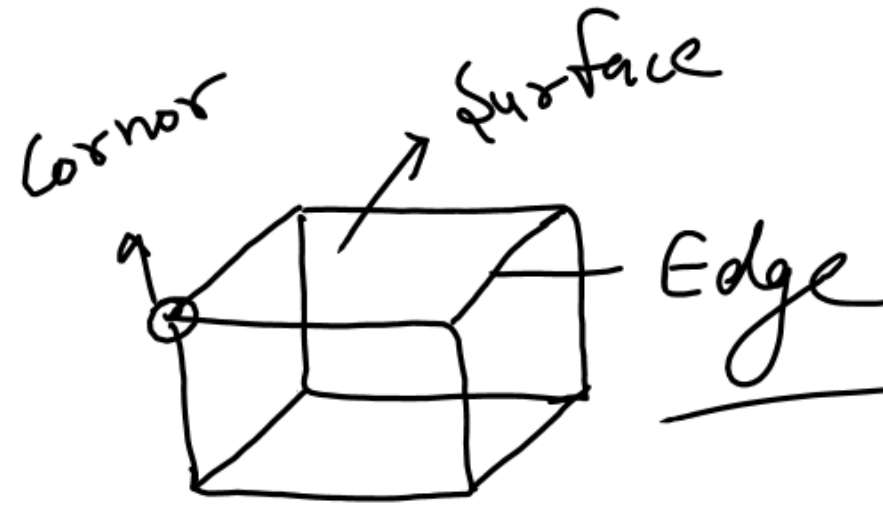


Cube & Cuboid

⇒ 6 Surface

⇒ 8 Corner

⇒ 12 Edges



1. Corner Cubes $\Rightarrow$ 3 Surface painted + 3 Surface colourless
2. middle Cubes $\Rightarrow$ 2 Surface painted + 4 Surface colourless
3. Central Cubes $\Rightarrow$ 1 Surface painted + 5 Surface colourless.
4. Inner Central Cubes $\Rightarrow$ 0 Surface painted + 6 Surface colourless

1. Total Cubes $\Rightarrow n^3$

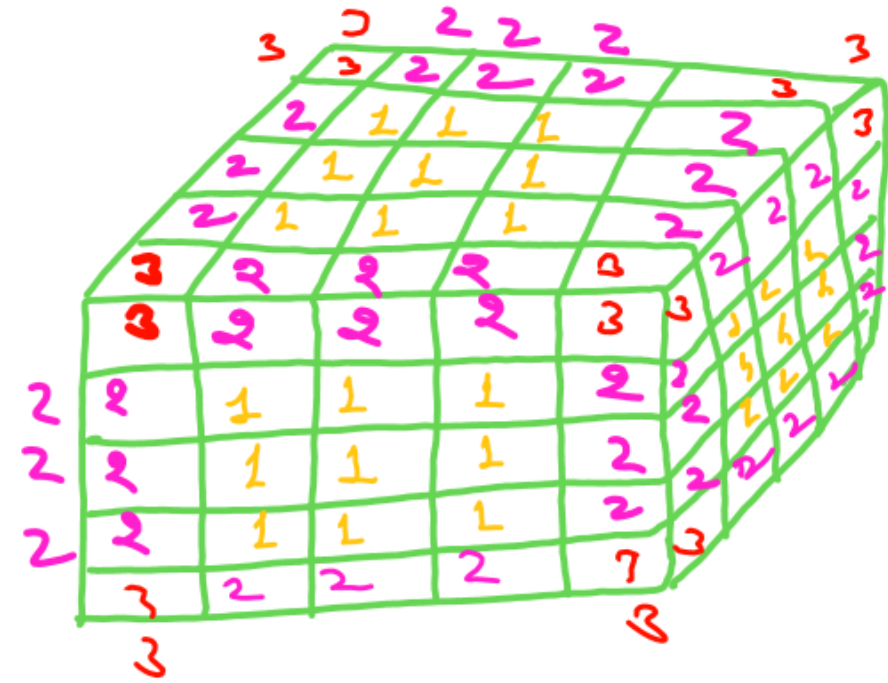
$$n \geq 5$$

2. Corner Cubes (3 s.p.c) $\Rightarrow 8$ (fix)

3. middle Cubes (2 s.p.c) $\Rightarrow 12(n-2)$

4. Central Cubes (1 s.p.c) $\Rightarrow 6(n-2)^2$

5. Inner Central Cubes (colorless surface) $\Rightarrow (n-2)^3$



Q
Type-1 A cube has been colored with Red Colour and cut into 216 smaller cubes then find such questions :-

1 Corner Cubes $\div$ 8 (Fix)

$$6^3 \Rightarrow \underline{216}$$
$$\underline{\underline{n \Rightarrow 6}}$$

2 2 surface painted Cubes $\div$ $12(n-2)$

$$\Rightarrow 12(6-2) \Rightarrow 12 \times 4 \Rightarrow \underline{\underline{48 \text{ Cubes}}}$$

3. Central Cubes :- $6(n-2)^2 \Rightarrow 6(6-2)^2$
 $\Rightarrow 6(4)^2 \Rightarrow \underline{\underline{96 \text{ cubes}}}$

4. Colourless Surface Cubes :-

$$(n-2)^3 \Rightarrow (6-2)^3 \Rightarrow \underline{\underline{64 \text{ Cube}}}$$

5. At least one surface painted Cubes :-

कम से कम

$$1 \text{ s.p.c} + 2 \text{ s.p.c} + 3 \text{ s.p.c}$$

$$96 + 48 + 8 \Rightarrow \underline{\underline{152 \text{ Cubes}}}$$

Q A cube is painted with Red Colour and cut into 729 smaller cubes then find :-

$$n = 9$$

① 3 surface painted cubes :- 8 (Fix)

② middle cubes :- $12(n-2) = 12(7) = \underline{84}$

3. Central Cubes ÷

$$6(n-2)^2 \Rightarrow 6(9-2)^2 \Rightarrow 6(7)^2 \Rightarrow 6 \times 49$$

$$\Rightarrow \underline{\underline{294 \text{ Cubes}}}$$

4. Inner Central Cubes ÷

$$(n-2)^3 \Rightarrow (9-2)^3 \Rightarrow 7^3 \Rightarrow \underline{\underline{343 \text{ Cubes}}}$$

5. At least 2 s.p.c $\Rightarrow$
અન લે ૩ન

$$2 \text{ s.p.c} + 3 \text{ s.p.c} \Rightarrow 84 + 8 \Rightarrow \underline{\underline{92 \text{ Cubes}}}$$

6. At most 1 s.p.c $\Rightarrow$

અધિક લે અધિક

Cubicles + 1 s.p.c

$$\Rightarrow 343 + 294 \Rightarrow \underline{\underline{637 \text{ Cubes}}}$$

Type #2