Non-Verbal Test of Reasoning (With Figure) 07/03/2022

Dice — (Imp Topic) (TCS) (Infosys)

Type-1
Colour Dice
Solid Dice
Hollow Dice

Type-2
Number Dice / Dotted Dice
Rotation of Dice

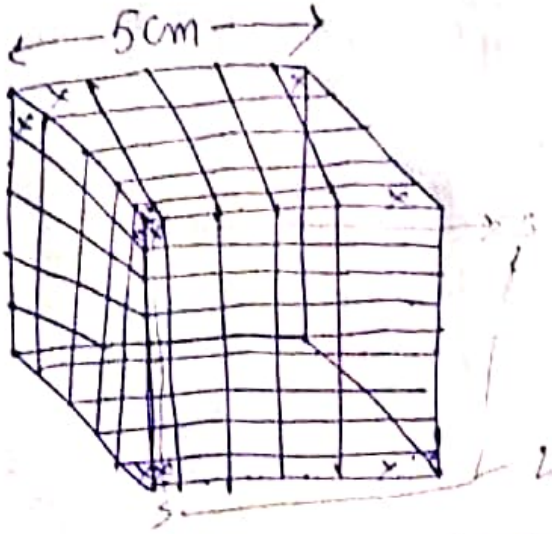
Rotation of Dice —

① Horizontal Rotation — Top & bottom surface fixed
② Front Vertical Rotation — Right & left side fixed
③ Side Vertical Rotation — Front & Back side fixed

Problems on Solid Color Dice — Level-1

① A solid dice outer edge 5 cm all outer surface are red colour. It has been sectioned in such a way u can make the smaller solid dice of edge 1 cm. — i) How many dice can be formed? ii) How many dice can be obtained having no face color?
iii) How many dice can be obtained having 1 face color?
iv) " " " " " " 2 " "
v) " " " " " " 3 " "?
vi) How many colored faces can be obtained?

VII) How many uncolored faces can be obtained?



∵ a cube has 6 surfaces

n = No of sec + 1 = 4 + 1 = 5

① no of dice = $n^3 = 5^3 = 125$

② No of Dice → NFC

$(n-2)^3 = (5-2)^3 = 27$ Inside Dice

③ No of dice 1FC

$6(n-2)^2$

$6 \times 3^2 = 54$

④ No of dice 2FC

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

⑤ No of dice 3FC = 8

⑥ Colored faces = $25 \times 6 = 150$

⑦ Total no of face = $125 \times 6 = 750$

Uncoloured face = $750 - 150$

$= 600$

② A solid dice of outer face 8 cm. all outer surface are green color. It have been sectioned in such a way u can get the smaller solid dice of outer edge 2cm.

i) No. of dice

$4^3 = 64$

ii) Inside dice / uncovered dice / Dice having no face color.

$(4-2)^3$

iii) No of dice having 1 FC

$6(4-2)^2$

2 FC

iv)

$12(4-2)$

3 FC

v)

8

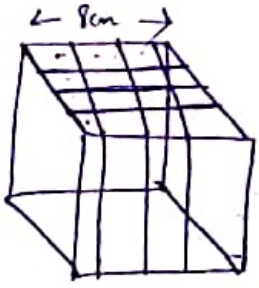
vi) Colored faces

16×6

vii) Total no of faces

64×6

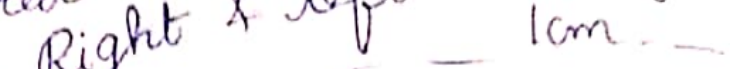
viii) Uncolored faces



$n = 3 + 1 = 4$

Level 2

① A Solid dice of outer edge 5cm. Top, bottom are red color. Front & back are green color. Right & left side are yellow color Sectioned.



Sec - A

~~Same as Level - 1~~

i) no of dice

ii) NFC

iii) 1FC

iv) 2FC

v) 3FC

vi) colored faces

vii) total no. of faces

viii) uncolored faces

Sec-B **

① How many dice can be obtained having red & yellow color?

12+8 = 20

② either red & yellow or red & green

12+12+8 = 32.

③ neither having red & yellow nor red & green but color

98 − 24.

(125 − 27)

④ either only red or only yellow color.

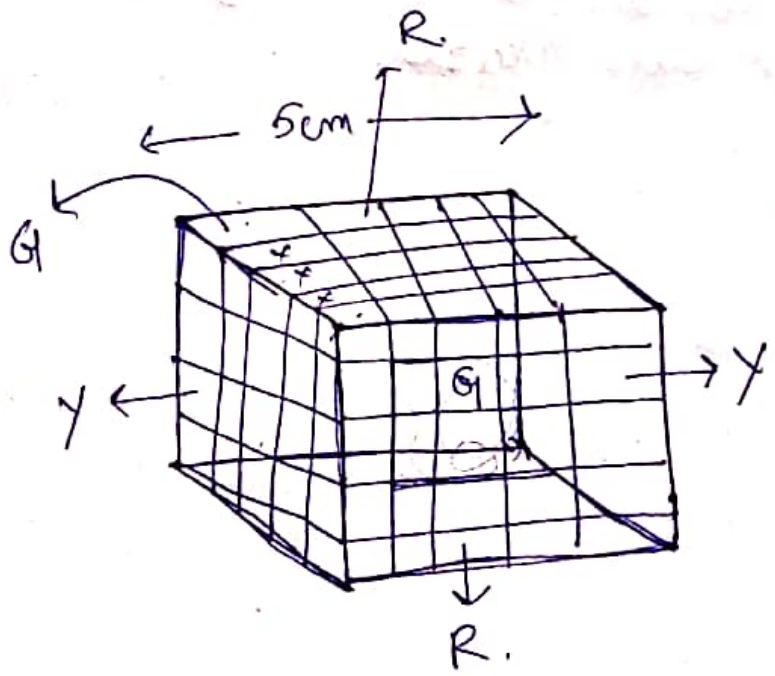
18 + 18 = 36

⑤ neither only red nor only yellow color but col.

98 − 36

⑥ red & yellow but not green.

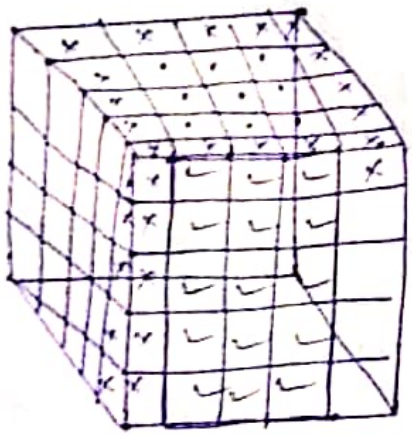
12



Level - 3

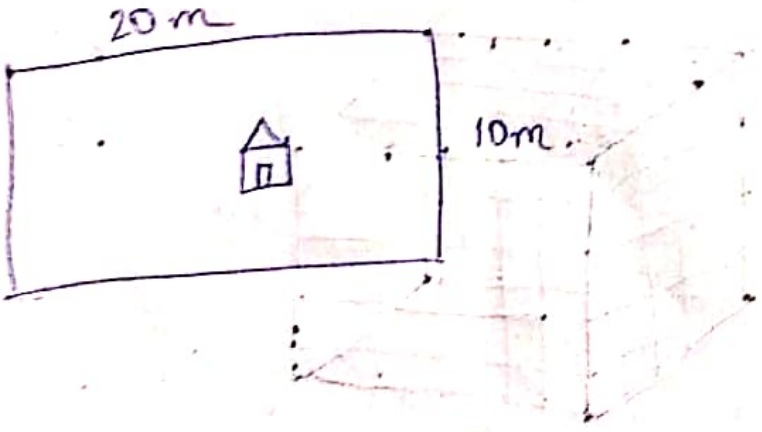
① A hollow dice of outer edge 5 cm, with a thickness of 1 cm, all outer walls are red color. It has been sectioned in such a way such that we can get the smaller solid dice of 1 cm thickness. How many uncolored faces can be obtained?

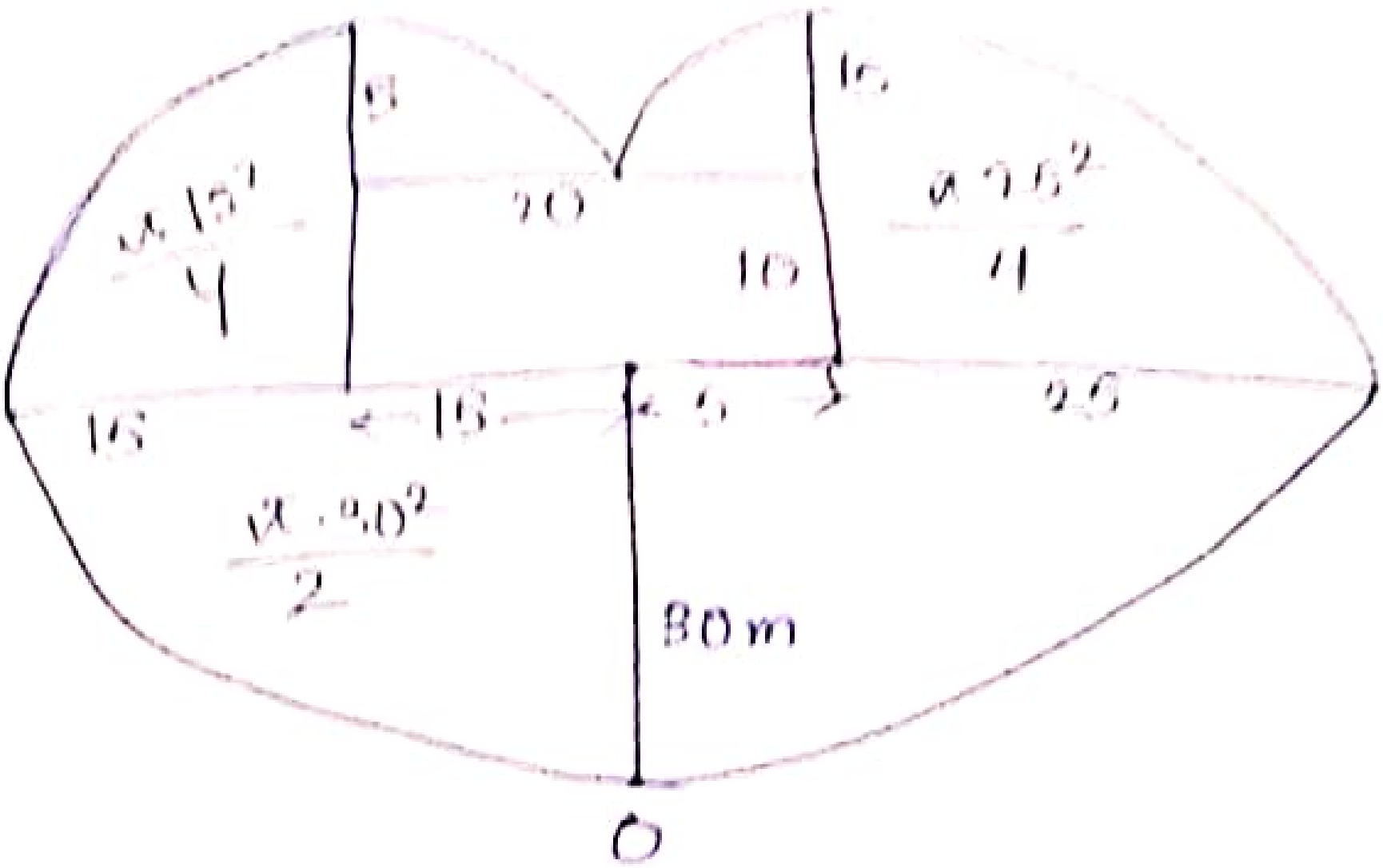
$98 \times 6 - 100$
$= 488$



$5 \times 4 \times 4 = 80$
$15 \times 4 \times 5 = 300$
$18 \times 6 = 108$
488

Q. A house is surrounded by wall with dimension 20m × 10m. A cow attached with a rope of 30m long & rope is attached 5m away from the corner (length wise). Find the area that cow can graze.




80m
O