



DEPARTMENT OF EMPLOYMENT AND TRAINING

TNPSC GROUP II A MAINS - UNIT II

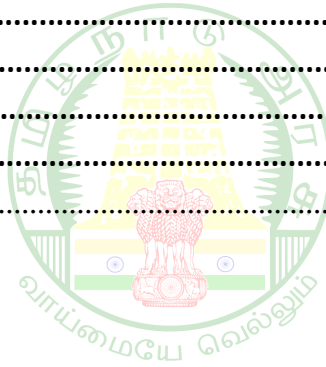
Course : TNPSC Group II A Mains Material

Subject : General Intelligence and Reasoning

Topic : Dice and Cubes

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Director,
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Dice and Cubes

Cubes:

A cube is a three dimensional solid object bounded by six square faces or surfaces, it can also be called a “regular hexahedron”. We are often interested in finding its surface area and volume.

Dices:

Dice are cubical or cuboidal shape objects containing numbers/figures/symbols embedded on their surfaces. Dice are used for gambling and non gambling such as craps, ludo etc.

These numbers are typically represented with dots (also called pips), and the layout ensures the die is fair and balanced for games.

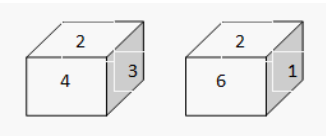
Certain Basic Rules:

There are certain dice rules in reasoning which can be used to solve dice-based questions:

Rule No. 1:

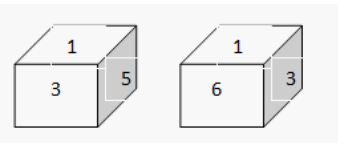
Two opposite faces of the dice cannot be adjacent to each other.

Example:



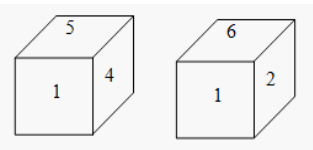
Rule No. 2:

If two dice are shown below, and one of the two common faces (Face number 4) is in the same position, then the remaining faces will be opposite to each other.



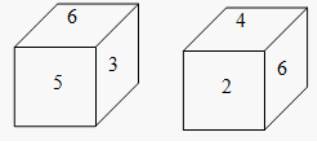
Rule No. 3:

If in 2 different positions of the dice, the positions (different), the position of the face that's common is the same, and then the opposite faces of the faces that remain will be in the same positions.



Rule No. 4:

If 2 positions of a die are given (Different) and it is also stated that the common face is different then the face opposite to the given common face would be that which is not shown on any given face in the 2 given positions. It is also to be noted that the opposite face of the faces that are left cannot be the same.

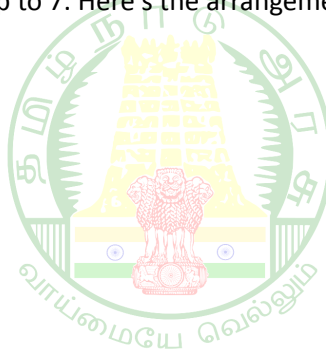
**Types of dices:**

1. Ordinary Dice
2. Standard Dice

Standard Dice:

A standard die is a cube with six faces, and each face is marked with a number from 1 to 6. The numbers on opposite faces of a standard die always add up to 7. Here's the arrangement of numbers on the opposite faces:

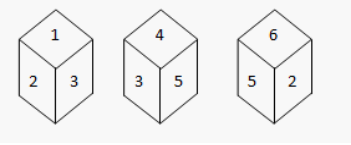
- 1 is opposite 6
- 2 is opposite 5
- 3 is opposite 4

**Ordinary Dice:**

In ordinary dice, the sum of any two numbers on adjacent surfaces is 7. if you look at a die, the numbers on adjacent faces add up to 7. So, if you have a 1,5 and 4 on one face, the adjacent faces will show 6, 2, and 3 respectively in some arrangement.

Various questions:

1. A dice with six faces is marked with six numbers 1, 2, 3, 4, 5 and 6 respectively. This dice is rolled three times and three positions are shown as:
Find which is opposite to 5.



- a. 1
- b. 3
- c. 2
- d. 4

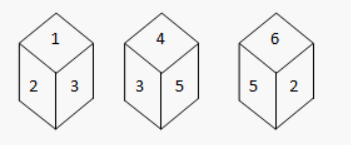
Answer: a. 1

Explanation:

From figures (ii) and (iii), we can conclude that the numbers 2, 4, 3, and 6 appear adjacent to the letter 5. Therefore, the number 1 appears opposite to 5. In other words, 1 appears opposite to 5.

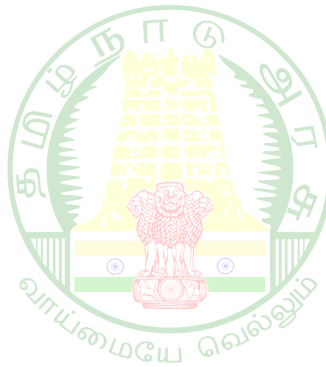
2. A dice with six faces is marked with six numbers 1, 2, 3, 4, 5 and 6 respectively. This dice is rolled three times and three positions are shown as:

Find which is opposite to 2.



- a. 3
- b. 1
- c. 4
- d. 5

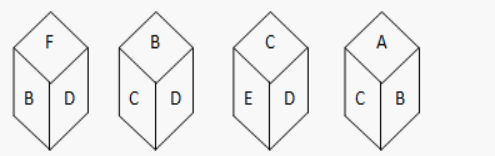
Answer: c. 4



Explanation:

From figures (ii) and (iii), we can conclude that the numbers 1, 3, 5 and 6 appear adjacent to the letter 2. Therefore, the number 4 appears opposite to 2. In other words, 4 appears opposite to 2.

3. Which face is opposite to the face with alphabet E, if four positions are given below as?



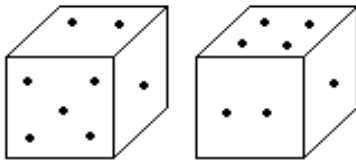
- a. A
- b. C
- c. D
- d. B

Answer: d. B

Explanation:

From figures (i), (ii) and (iv), we can conclude that F, D, C and A lie adjacent to B. Hence, E must lie opposite to B.

4. Two positions of dice are shown below. How many points will appear on the opposite to the face containing 4 points?



- a. 3
- b. 4
- c. 2
- d. 1

Answer: b. 4

Explanation:

In these two positions one of the common faces having 1 point is in the same position. Therefore according to rule (2). There will be 4 points on the required face.

5. Two positions of dice are shown below. What will appear on the opposite side to the face containing 3?



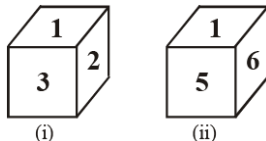
- a. 4
- b. 5
- c. 1
- d. 2

Answer: c. 1

Explanation:

Based on the above image, 2, 4, 5 and 6 parallel and adjacent sides to the 3. So, 1 is opposite to 3

6. Based on the following dice, what will be the opposite to 4?



- a. 1

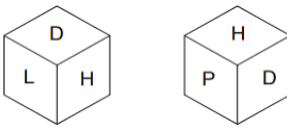
- b. 6
- c. 5
- d. 3

Answer: a. 1

Explanation:

Based on the above image, 2,3,5 and 6 parallel and adjacent sides to the 4. So, 1 is opposite to 4.

7. A dice has H,D,E,L,F and P sides. Which face is opposite to the face with alphabet P, if four positions are given below as?



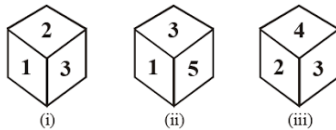
- a. H
- b. E
- c. D
- d. L

Answer: d. L

Explanation:

Based on the above image, D,H,E and F parallel and adjacent sides to the P. So, L is opposite to P.

8. Three dice having 1,2,3,4,5 & 6 on different sides. Based on the following image, what will be opposite to 3?



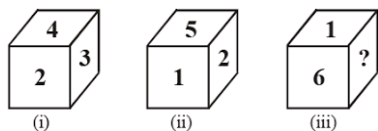
- a. 2
- b. 6
- c. 4
- d. 1

Answer: b. 6

Explanation:

Based on the above image, 2,4,5 and 6 parallel and adjacent sides to the 3. So, 6 is opposite to 3.

9. Find the answer?



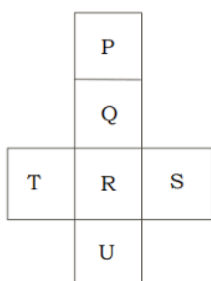
- a. 2
- b. 4
- c. 6
- d. 5

Answer: d. 5

Explanation:

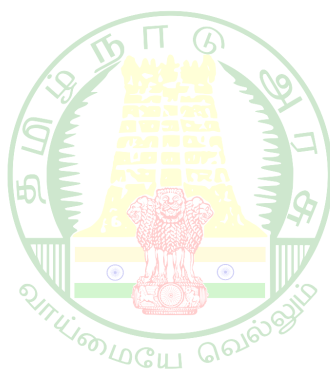
Based on the above images. The answer is 5.

10. By using the following image, What will be opposite to R?



- a. Q
- b. R
- c. P
- d. S

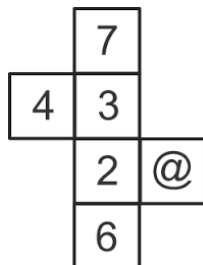
Answer: c.P



Explanation:

Based on the above image, Q,T,S and U parallel and adjacent sides to the 4. So, P is opposite to R.

11. Find which one is opposite to 7.



- a. 2
- b. 3
- c. 6

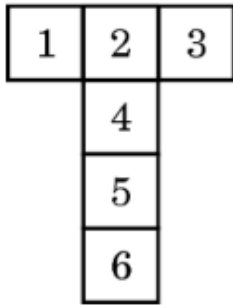
d. 4

Answer: a. 2

Explanation:

Based on the above image, 4,3,6 and @ parallel and adjacent sides to the 4. So, 1 is opposite to 7.

12. Find which one is opposite to 5?



a. 6

b. 3

c. 1

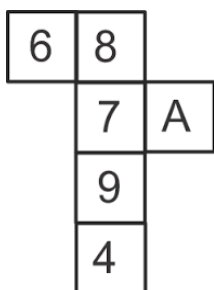
d. 2

Answer: d. 2

Explanation:

Based on the above image, 1, 4,3 and 6 parallel and adjacent sides to the 4. So, 2 is opposite to 5.

13. Find which is not parallel to A?



a. 8

b. 7

c. 6

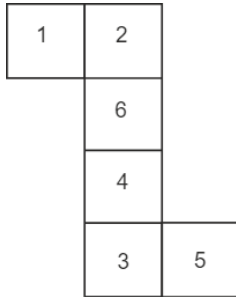
d. 4

Answer: c. 6

Explanation:

Based on the above image, 2,4,5 and 3 parallel and adjacent sides to the 4. So, 6 is opposite to A.

14. Find which is exactly opposite to 4?



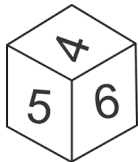
- a. 3
- b. 5
- c. 1
- d. 2

Answer: d. 2

Explanation:

Based on the above image, 2,1,5 and 6 parallel and adjacent sides to the 4. So, 2 is opposite to 4.

15. Based on the Dice rule, Which is exactly opposite to 1?



- a. 2
- b. 1
- c. 3
- d. 5

Answer: b. 6

Explanation:

The numbers on opposite faces of a standard die always add up to 7. Here's the arrangement of numbers on the opposite faces:

- 1 is opposite 6
- 2 is opposite 5

- 3 is opposite 4

Practice Problems:

1. A dice having 6 faces with numbers 1,2,3,4,5 & 6. By using the following figures, Which is exactly opposite to 3?



figure 1



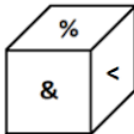
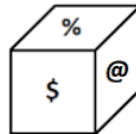
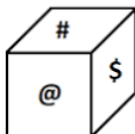
figure 2



figure 3

- a. 5
- b. 6
- c. 3
- d. 1

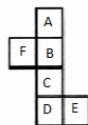
2. A dice having 6 faces with the symbols are #,@,\$,&,%,<. Then find which symbol is exactly opposite to %?



- a. \$
- b. @
- c. #
- d. <

Answer: #

3. If the Dice of Image is folded, what will be the result?



(X)



(a)



(b)



(c)

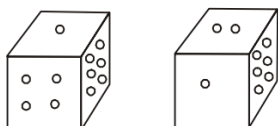


(d)

- a. a

- b. b
- c. c
- d. d

4. How many circles will be placed on the opposite side of 4 circles?

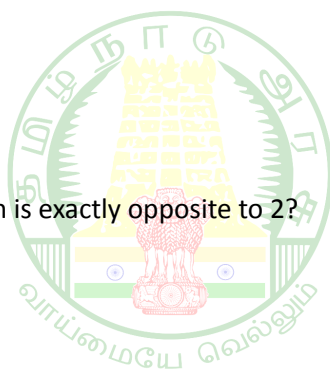


- a. 3
- b. 4
- c. 2
- d. 1

5. Based on the Dice rule, Which is exactly opposite to 2?



- a. 5
- b. 4
- c. 3
- d. 1



Answers:

Q.No	1	2	3	4	5
Answers	b	c	c	c	a