

Patterns

Type I : How to find the missing term or next term (number or letter or figure) in series to continue the given series?

- Identify the order (descending or ascending) of series. Observe the pattern using operations : addition, subtraction, multiplication, division, skip counting and reverse counting.
- Identify the order of alphabetical series either from A to Z or Z to A.
- Numbering of alphabets either starts from A or starts from Z.
- Skipping letters.

Type II : How to find the missing term in the pattern?

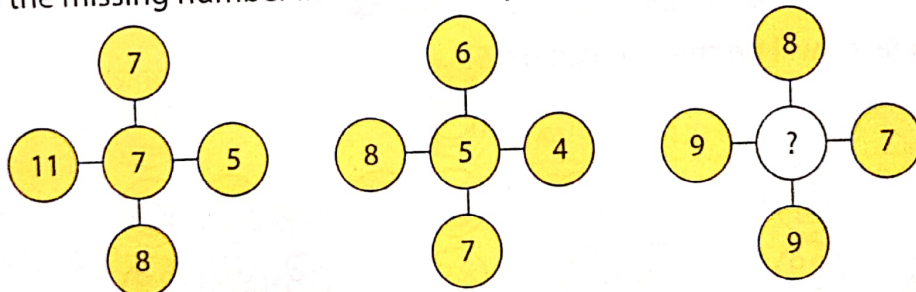
To find the missing term in the pattern, identify the rule followed in rest of the given terms in pattern using mathematical operations (+, -, ×, ÷), skip counting and reverse counting.

Type III : How to find the missing part in the figure pattern?

Complete the figure pattern by drawing its incomplete part in the pattern.

Example : 1

Find the missing number in the number pattern given below.



(A) 2

(B) 3

(C) 4

(D) 5

Explanation (B) : First we carefully study the given two complete patterns.

In the first pattern, the middle term is the sum of difference between the top and bottom numbers & left and right numbers.

$$(11 - 5) + (8 - 7) = 6 + 1 = 7$$

Similarly, in second pattern $(8 - 4) + (7 - 6) = 4 + 1 = 5$

Hence, in third pattern the missing number is $(9 - 7) + (9 - 8) = 2 + 1 = 3$.

Example : 2

Find the missing numbers in the series below.

3, 6, 11, 18, 27, ?, 51, ?

(A) 30, 55

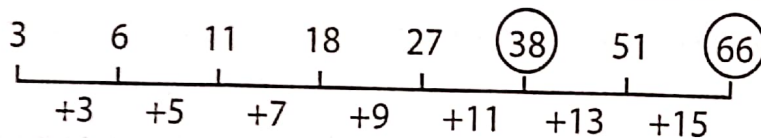
(B) 34, 60

(C) 38, 66

(D) 42, 71

Explanation (C) : Rule followed in the series is :

Difference between consecutive terms are consecutive odd numbers.



Example : 3

Which of the following options will complete the pattern in Figure (X)?

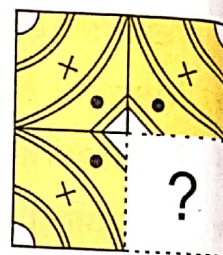
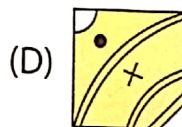
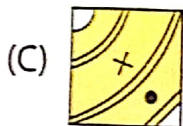
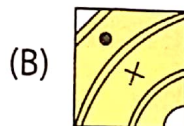
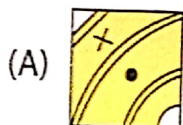
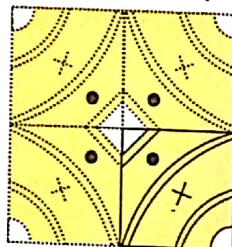


Figure (X)

Explanation (B) : Complete the pattern given in the question by drawing its incomplete part.



EXERCISE

1. How many smiling faces will be there in Pattern 5?



Pattern 1



Pattern 2



Pattern 3

(A) 37

(B) 34

(C) 40

(D) 26

2. What is the number on Teddy Bear 11?

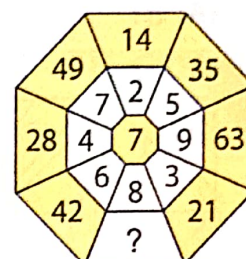


Bear 1 Bear 2 Bear 3 Bear 4 Bear 5 Bear 6 Bear 7 Bear 8

- (A) 3 (B) 1 (C) 4 (D) 2

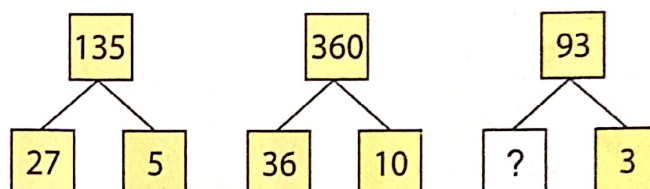
3. What is the missing number?

- (A) 12
(B) 44
(C) 56
(D) 82



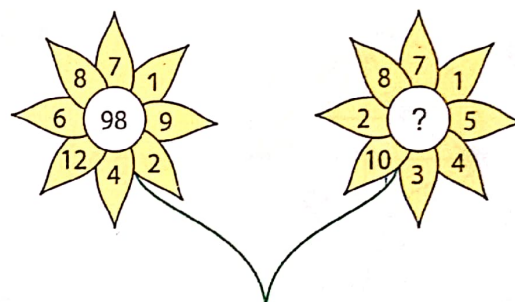
4. Find the missing number.

- (A) 31
(B) 43
(C) 52
(D) 69



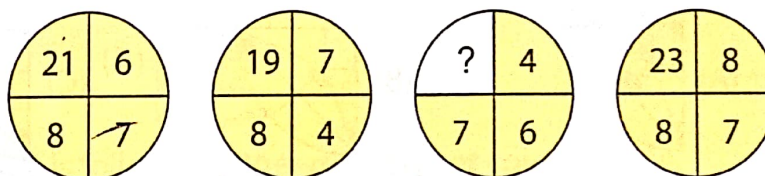
5. Which number will come in place of (?)?

- (A) 76
(B) 80
(C) 88
(D) 90



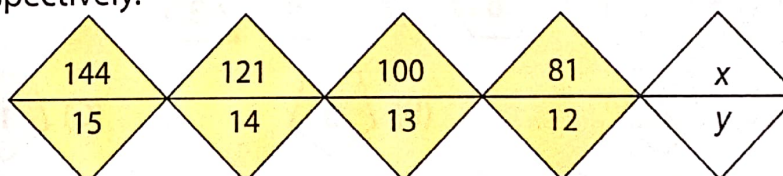
6. Find the missing number.

- (A) 17
(B) 18
(C) 19
(D) 21



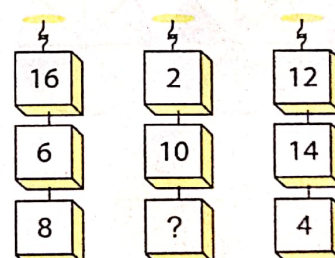
7. Find the missing numbers x and y respectively.

- (A) 60, 10
(B) 49, 11
(C) 64, 11
(D) 55, 10



8. What number should replace the question mark?

- (A) 12
(B) 20
(C) 15
(D) 18



Direction (9 - 11) : Find the missing number to complete the given number series.

9. 1, 4, 9, ?, 25, 36, 49

(A) 20

(B) 16

(C) 12

(D) 18

10. 3, 5, 6, 10, 9, ?, 12, 20

(A) 15

(B) 10

(C) 20

(D) 25

11. 1, 8, 27, 64, ?, 216

(A) 81

(B) 100

(C) 120

(D) 125

Direction (12 - 13) : Which of the following options will complete the pattern in Figure (X)?

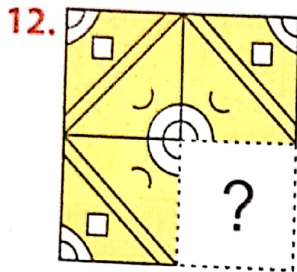


Figure (X)

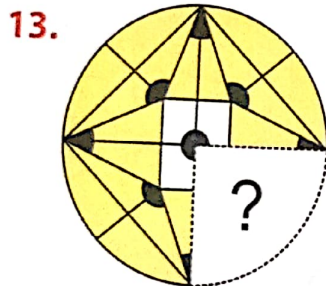
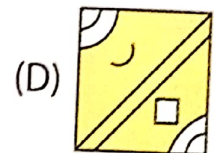
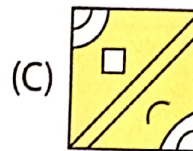
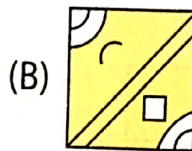
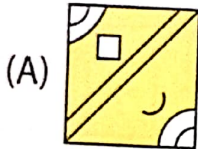
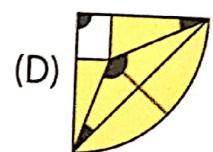
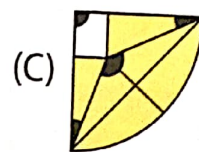
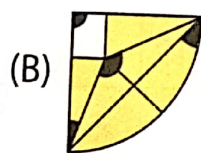
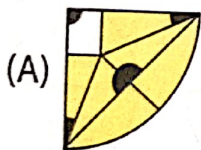
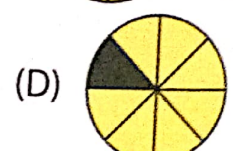
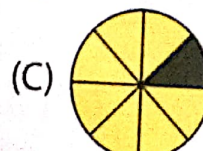
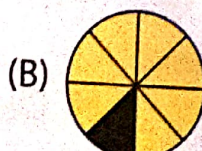
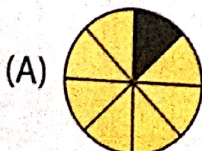
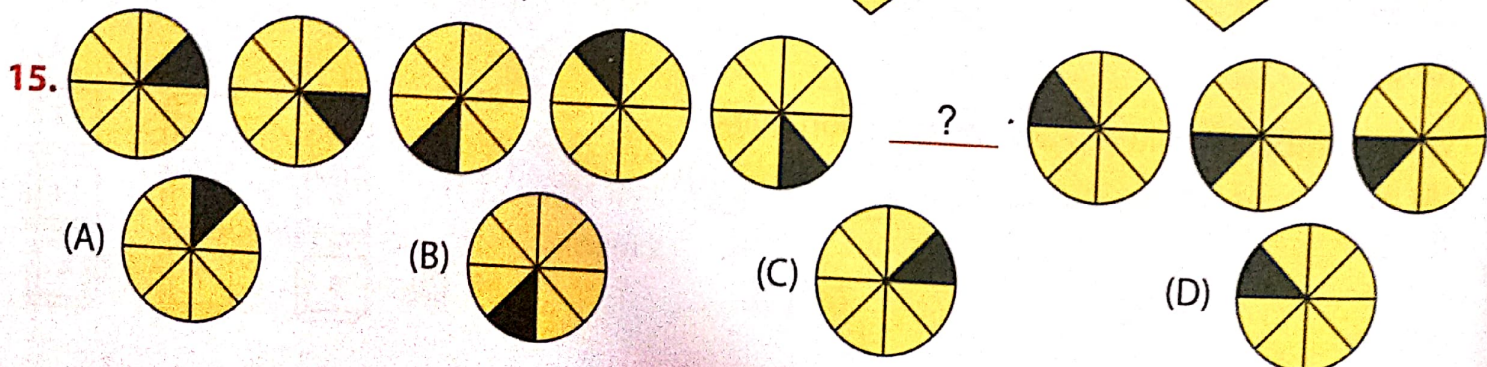
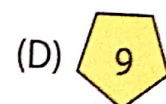
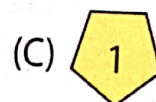
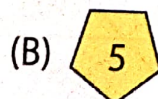
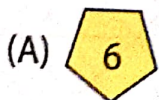


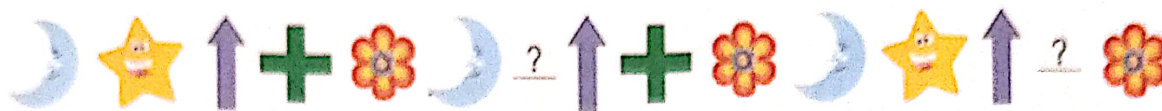
Figure (X)



Direction (14 - 15) : Find the missing figure which complete the given series.

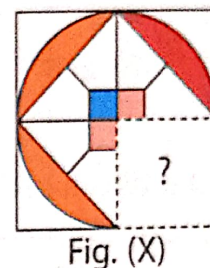
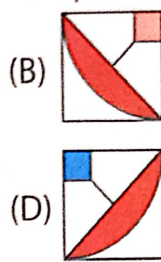
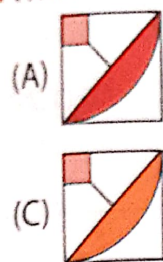


16. Find the missing figures.



- (A) (B) (C) (D)

17. Which of the following options will complete the pattern in Fig. (X)?

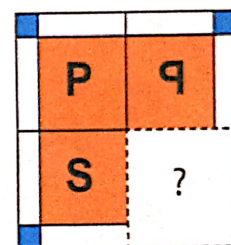
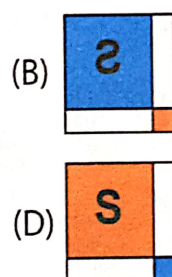
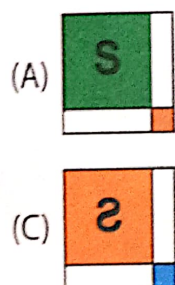


18. Find the missing number in the given number series.



- (A) 55 (B) 65 (C) 70 (D) 60

19. Which of the following figures will complete the pattern in the given figure?

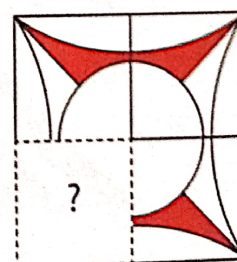
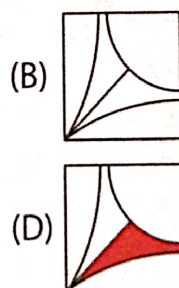
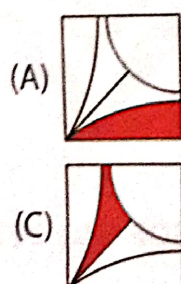


20. Find the missing number, if a certain rule is followed either row-wise or column-wise.

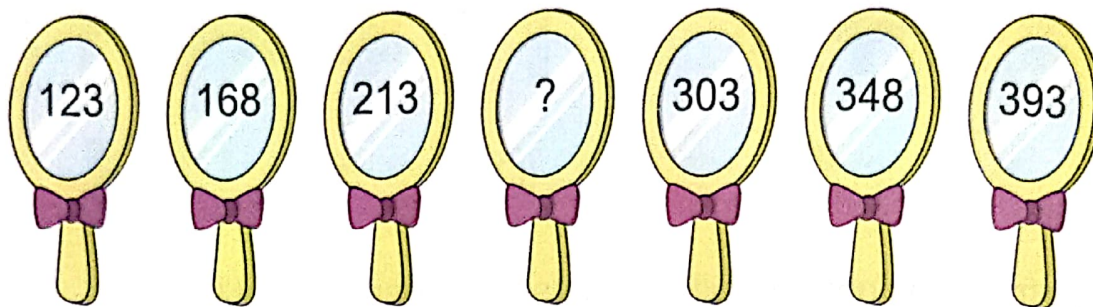
- (A) 5
(B) 6
(C) 4
(D) 3

5	5	6
4	3	?
20	15	24

21. Which of the following figures will complete the pattern in the given figure?



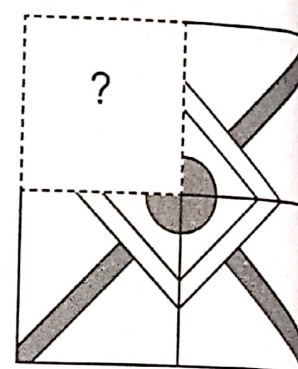
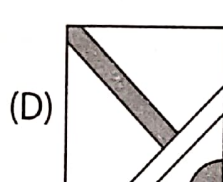
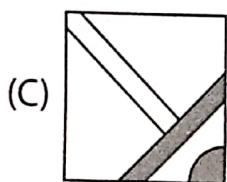
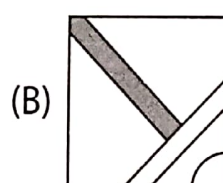
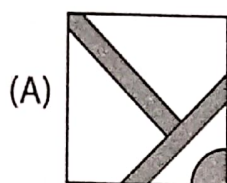
22. Find the missing number in the given number pattern.



- (A) 258 (B) 253 (C) 300 (D) 283

(SOF NSO 2020)

23. Which of the following figures will complete the pattern in the given figure?



(SOF NSO 2020)

24. Study the given pattern and tell the number of cups in Pattern 10.



Pattern 1



Pattern 2



Pattern 3

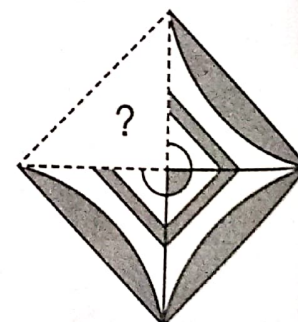
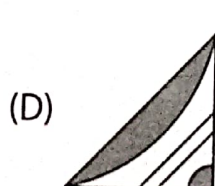
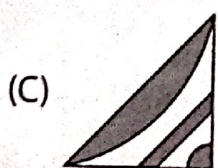
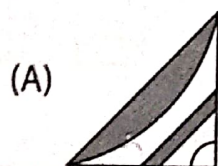
(A) 19

(B) 21

(C) 23

(D) 25 (SOF IMO 2020)

25. Select a figure from the options which will complete the given figure pattern?



(SOF IMO 2020)

26. Find the missing number, if a certain rule is followed either row-wise or column-wise.

- (A) 18
(B) 20
(C) 22
(D) 25

15	18	16
30	?	21
45	40	37

(SOF NCO 2021)

27. Find the missing number, if a certain rule is followed either row-wise or column-wise.

- (A) 10
(B) 21
(C) 20
(D) 15

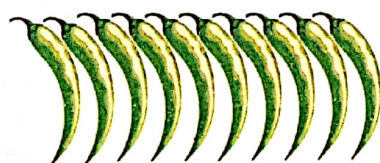
8	5	7
4	6	3
32	30	?

(SOF NSO 2021)

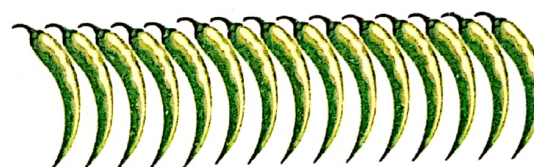
28. Study the given patterns carefully and tell the number of chillies in Pattern 8.



Pattern 1



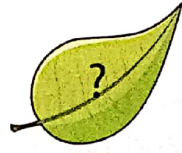
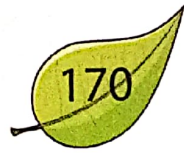
Pattern 2



Pattern 3

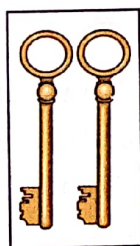
- (A) 35 (B) 40 (C) 38 (D) 45 (SOF NSO 2021)

29. Find the missing number in the given number pattern.

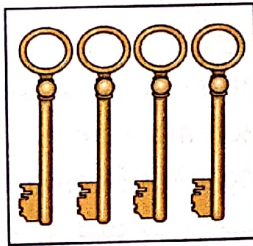


- (A) 195 (B) 180 (C) 210 (D) 205 (SOF IMO 2021)

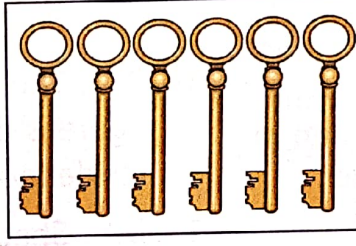
30. Study the given patterns carefully and tell the number of keys in the pattern 8.



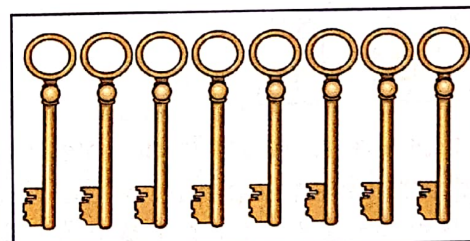
Pattern 1



Pattern 2



Pattern 3



Pattern 4

- (A) 12 (B) 15 (C) 16 (D) 18 (SOF IMO 2021)

Answer Key

- | | | | | | | |
|---------|---------|---------|---------|---------|---------|---------|
| 1. (A) | 2. (C) | 3. (C) | 4. (A) | 5. (B) | 6. (A) | 7. (C) |
| 8. (D) | 9. (B) | 10. (A) | 11. (D) | 12. (B) | 13. (C) | 14. (B) |
| 15. (A) | 16. (C) | 17. (D) | 18. (D) | 19. (C) | 20. (C) | 21. (D) |
| 22. (A) | 23. (D) | 24. (B) | 25. (C) | 26. (C) | 27. (B) | 28. (B) |
| 29. (A) | 30. (C) | | | | | |

Analogy and Classification

Analogy

In this topic, two pair of figures is given on either side of :: .

There is a certain relationship between each pair. The student has to identify the relation and find the missing figure.

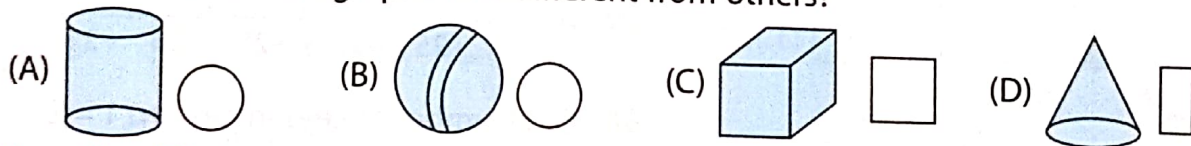
Classification

How to classify or find the odd figure/different figure/similar figure amongst the others?

Observe the figures in questions on the basis of their shapes, size, shadings, their parts, their mirror images, number of sides, curved and straight characteristics etc., to find the odd figure, different figure or similar figure amongst the given figures.

Example : 1

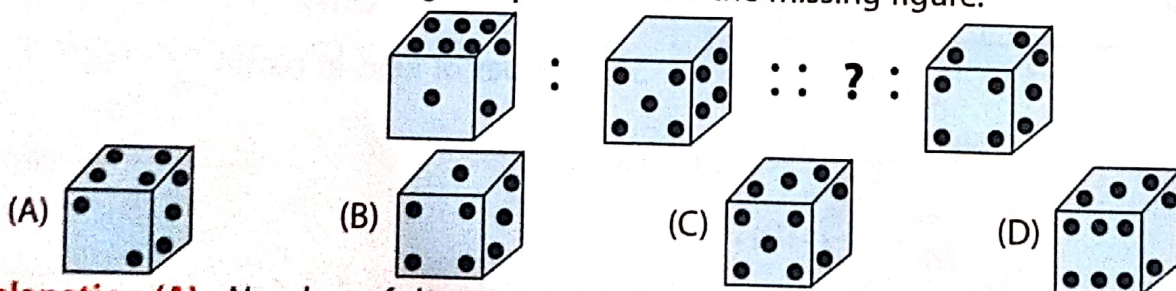
Which of the following options is different from others?



Explanation (D) : In options (A), (B) & (C) pair of figures are related to each other as corresponding shape can be made from the solid figure.

Example : 2

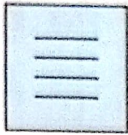
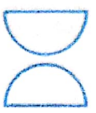
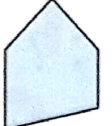
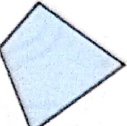
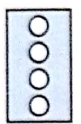
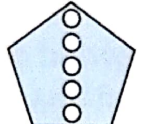
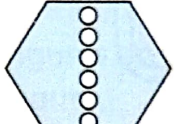
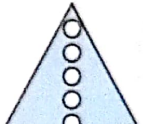
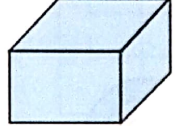
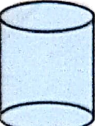
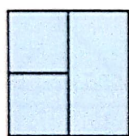
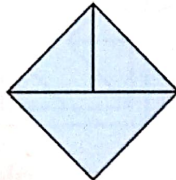
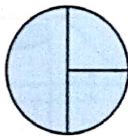
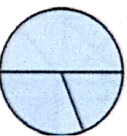
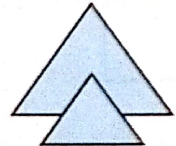
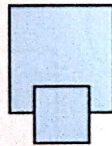
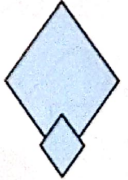
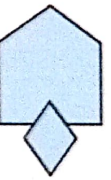
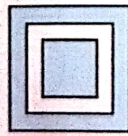
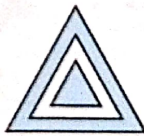
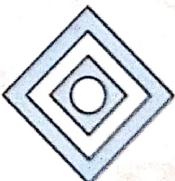
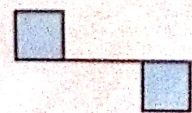
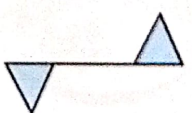
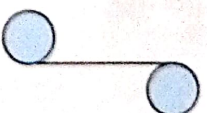
There is a certain relationship between the pair of figures given on either side of :: . Identify the relationship of given pair and find the missing figure.



Explanation (A) : Number of dots on visible faces of cubes is 9.

EXERCISE

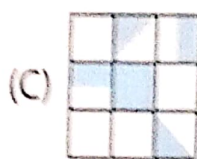
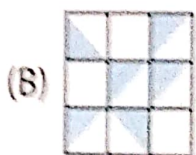
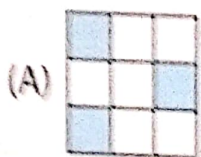
Direction (1 - 9) : Find the odd one out.

1. (A)  (B)  (C)  (D) 
2. (A)  (B)  (C)  (D) 
3. (A)  (B)  (C)  (D) 
4. (A)  (B)  (C)  (D) 
5. (A)  (B)  (C)  (D) 
6. (A)  (B)  (C)  (D) 
7. (A)  (B)  (C)  (D) 
8. (A)  (B)  (C)  (D) 
9. (A)  (B)  (C)  (D) 

10. Choose the figure which is similar to Figure (X).

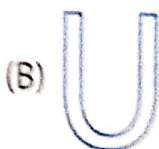


Figure (X)

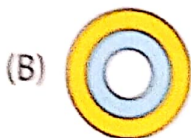


Direction (11 - 14) : Identify the relation between the given pair on the either side of :: and find the missing figure.

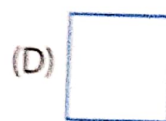
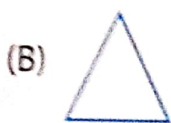
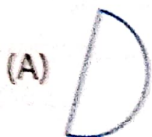
11. O : S :: T : ?



12. : :: : ?



13. : :: ? :



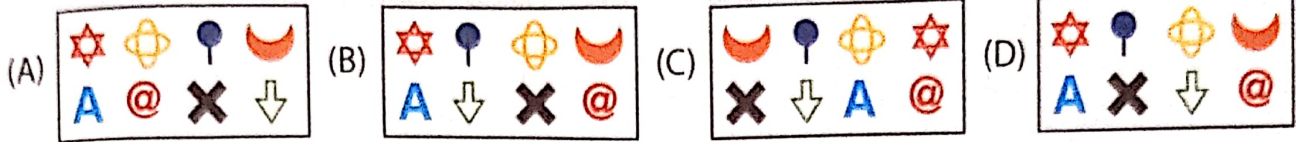
14. : :: : ?



15. Select a figure from the options which is same as the given Fig. (X).



Fig. (X)

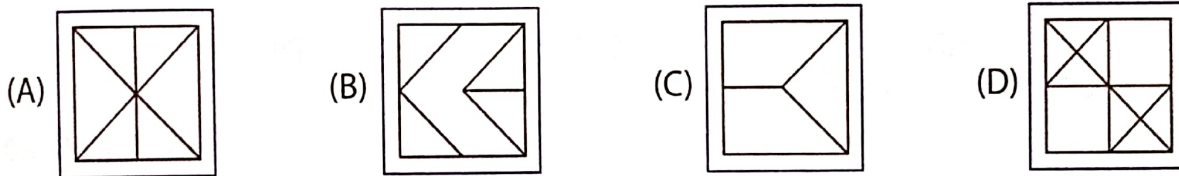
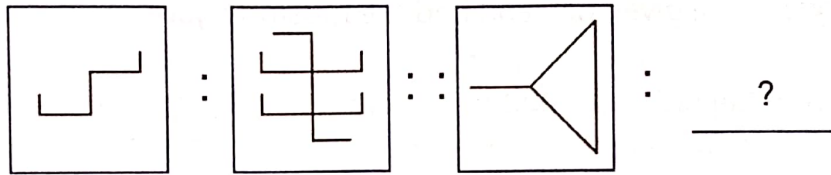


16. There is a certain relationship between the pair of figures on the either side of ::. Identify the relationship of the given pair and find the missing figure.

E : 12 :: T : ?

(A) 10 (B) 8 (C) 6 (D) 14

17. There is a certain relationship between the pair of figures on the either side of ::. Identify the relationship of the given pair and find the missing figure.



18. There is a certain relationship between the pair of figures on the either side of ::. Identify the relation between the given pair and find the missing figure.



(A) 9 (B) 5 (C) 8 (D) 6

19. Select the odd one out.



20. Find the odd one out.

(A) **ABC**

(B) **JKL**

(C) **NOQ**

(D) **XYZ**

21. There is a certain relationship between the pair of figures on the either side of ::. Identify the relationship between the given pair and find the missing figure.



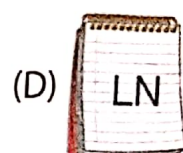
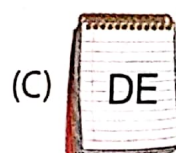
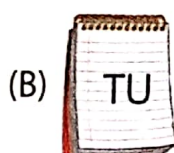
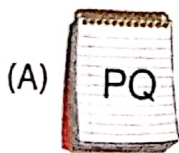
(A) **4**

(B) **5**

(C) **6**

(D) **7** (SOF IMO 2020)

22. Find the odd one out.



(SOF IMO 2020)

23. There is a certain relationship between the pair of figures on the either side of ::. Identify the relationship between the given pair and find the missing figure.



(A) **14**

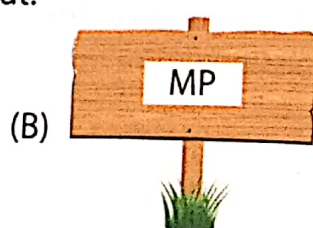
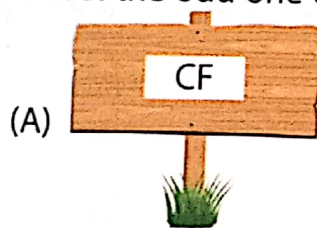
(B) **9**

(C) **18**

(D) **20**

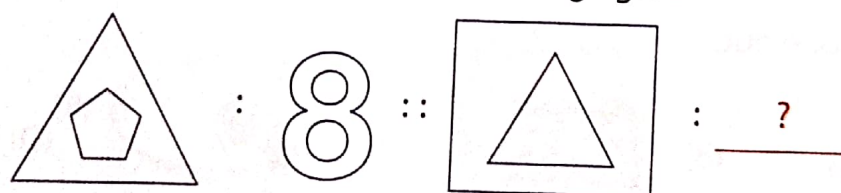
(SOF IMO 2020)

24. Select the odd one out.



(SOF NCO 2021)

25. There is a certain relationship between the pair of figures on the either side of ::. Identify the relationship between the given pair and find the missing figure.



(A) 7

(B) 8

(C) 9

(D) 6

(SOF NCO 2021)

26. Select the odd one out.

(A) 5

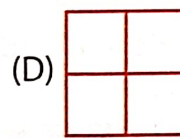
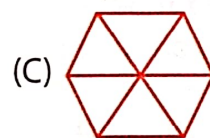
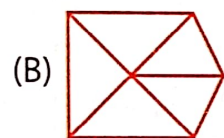
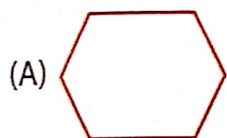
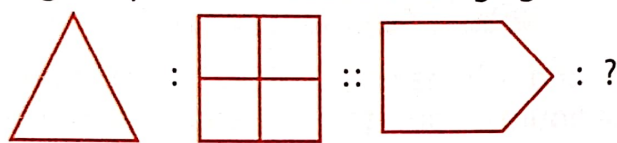
(B) 7

(C) 8

(D) 9

(SOF NSO 2021)

27. There is a certain relationship between the pair of figures on either side of ::. Identify the relationship between the given pair and find the missing figure.



(SOF NSO 2021)

28. There is a certain relationship between the pair of figures on the either side of ::. Identify the relationship between the given pair and find the missing figure.



(A) 18

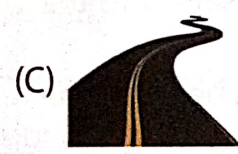
(B) 22

(C) 24

(D) 16

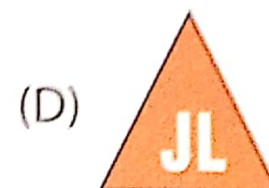
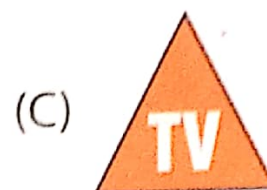
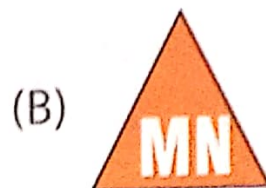
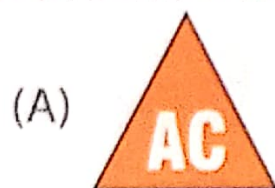
(SOF IMO 2021)

29. There is a certain relationship between the pair of figures on the either side of ::. Identify the relationship between the given pair and find the missing figure.



(SOF IMO 2021)

30. Find the odd one out.



(SOF IMO 2021)

Answer Key

1. (D)	2. (C)	3. (D)	4. (D)	5. (A)	6. (D)	7. (D)
8. (D)	9. (B)	10. (C)	11. (C)	12. (D)	13. (C)	14. (A)
15. (B)	16. (B)	17. (C)	18. (A)	19. (D)	20. (C)	21. (B)
22. (D)	23. (C)	24. (C)	25. (A)	26. (C)	27. (C)	28. (C)
29. (C)	30. (B)					