BLOOM | BRO Bloom Reasoning Olympiad

GRADE 8

Bloom Reasoning Olympiad

Sample Paper 1

Maximum Time : 60 Minutes **Maximum Marks : 60**

INSTRUCTIONS

1. There are 50 Multiple Choice Questions in this paper divided into two sections :

   Section A 40 MCQs; 1 Mark each

   Section B 10 MCQs; 2 Marks each

2. Each question has Four Options out of which **ONLY ONE** is correct.
3. All questions are compulsory.
4. There is no negative marking.
5. No electronic device capable of storing and displaying visual information such as calculator and mobile is allowed during the course of the exam.

School Name	
Student's Name	

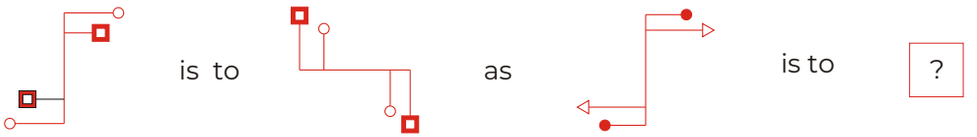
Section A (1 Mark Questions)

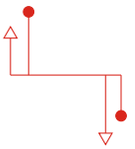
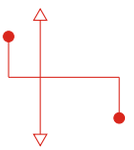
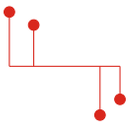
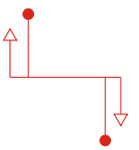
1. Which number will come in place of question mark(?)?

45 : 20 : : 51 : ?

(a) 22 (b) 27 (c) 24 (d) 19

2. Which option figure completes the second pair in the same way as the first pair?



(a)  (b)  (c)  (d) 

3. Find the next term for the given series.

23, 24, 26, 29, 33, ?

(a) 34 (b) 38 (c) 39 (d) 37

4. If DOWN is coded as CNVM, then the word WITH will be coded as

(a) XJUI (b) VFRI (c) THSG (d) VHSG

5. TELEPHONE is related to RING, in the same way as DOOR is related to

(a) OPEN (b) KNOCK (c) WOOD (d) KEY

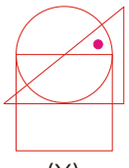
6. Find the next term for the given series.

29, 48, 67, 86, ?

(a) 95 (b) 104 (c) 94 (d) 105

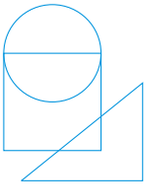
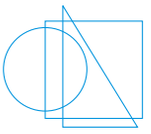
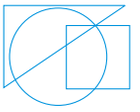
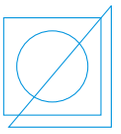
Direction (Q.No. 7) In the given question, one dot is placed in the figure marked as (X). The question is followed by four alternatives marked as (a), (b), (c) and (d). One out of these four options contains region(s) which is common to the circle, square, triangle, similar to that marked by the dot in figure (X).

7. **Question Figure**



(X)

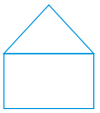
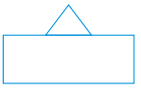
Answer Figures

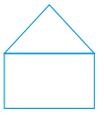
(a)  (b)  (c)  (d) 

8. If 'U' means (×), 'V' means (–), 'Y' means (÷) and 'X' means (+), then what will be the value of the following expression
(50 Y 2) X (28 U 4)

(a) 137 (b) 142 (c) 158 (d) 163

9. Find the next term for the series given below.

(1)  (2)  (3)  (4) ?

(a)  (b)  (c)  (d) 

10. Ram starts from his house facing towards East and moves 5 m, then he turns right and again moves 5 m. Towards which direction is he facing now?

(a) East (b) West (c) North (d) South

11. If EARN is written as GCTP, how NEAR can be written in that code?

(a) CTGP (b) GPTC (c) PGCT (d) PCGT

12. Find the missing term for the given series?

G2X, J4V, M8T, ?, S32P

(a) N64S (b) P16R (c) Q16R (d) P8S

13. If letters of the English alphabet are written from right to left as shown below, then which letter is fifth to the right of the seventeenth letter from the right end?

Z Y X W V U T S R Q P O N M L K J I H G F E D C B A

(a) K (b) M (c) L (d) V

14. Seema went to watch the magic show 9 days ago. She goes to watch show only on Thursday. What is the day of the week today?

(a) Sunday (b) Saturday (c) Friday (d) Monday

15. Find the next term for the given series.

0, 7, 26, 63, ?

(a) 108 (b) 124
(c) 135 (d) 145

16. Find what will come at the place of '?' in the given sereis.

AZBY, CXDW, EVFU, ?

(a) ITGS (b) GSIT (c) GTSI (d) GTHS

17. If 12 ★ 4 = 3, 27 ★ 9 = 3 and 36 ★ 12 = 3, then ★ stands for

(a) + (b) – (c) ÷ (d) ×

18. Shaan and Kunal are good in cricket and football. Sonu and Shaan are good in cricket and hockey. Abhishek is good in hockey. Who is good in all the three games?

(a) Shaan (b) Kunal (c) Sonu (d) Abhishek

19. Which one of the four interchanges in signs would make the given equation correct?

$20 \times 4 + 6 \div 3 - 10 = 13$

(a) × and ÷ (b) + and – (c) × and – (d) ÷ and +

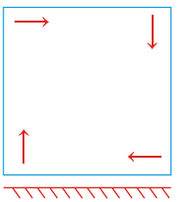
20. If each of the twelve digits on a watch is replaced by English alphabets A, B, C, D, E and so on. The hour hand will be between which pair letters at 9:30 am?

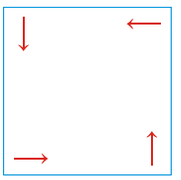
(a) H and G (b) K and L (c) J and I (d) E and F

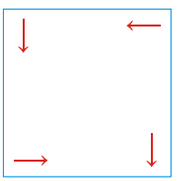
21. At what angle the hands of a clock are inclined at 3 h 40 min?

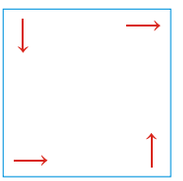
(a) 150° (b) 120° (c) 45° (d) 130°

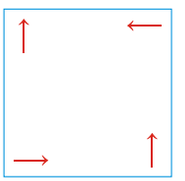
22. Choose the correct water image of the given picture.



(a) 

(b) 

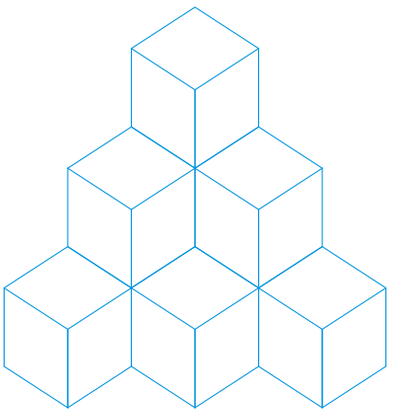
(c) 

(d) 

23. Calculate the number of odd days in an ordinary year.

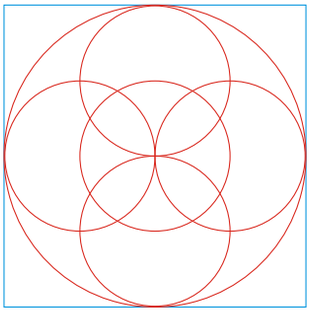
(a) 0 (b) 1 (c) 2 (d) None of these

24. Count the number of cubes in the given figure.



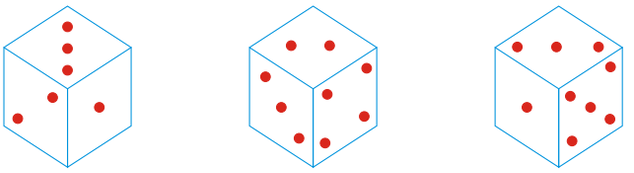
(a) 10 (b) 8 (c) 6 (d) 5

25. How many circles are there in the figure given below?



(a) 6 (b) 5
(c) 2 (d) 3

26. A dice is rolled thrice and its three different positions are as shown below.



The number of dots on the face opposite to the face having 3 dots is
(a) 5 (b) 4
(c) 1 (d) 6

27. Find the mirror image of the number given below?

(a) 5873 (b) 2873 (c) 2837 (d) 2837

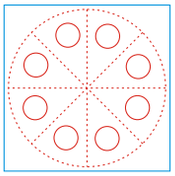
28. Choose the odd one.
(a) 9-720 (b) 8-560
(c) 10-900 (d) 11-170

29. Q's mother is the sister of P and daughter of M. S is the daughter of P and sister of T. How is M related to T?
(a) Grandmother
(b) Father
(c) Grandfather
(d) Grandfather or Grandmother

30. Choose the odd pair.
(a) (21 : 24) (b) (28 : 32)
(c) (14 : 16) (d) (54 : 62)

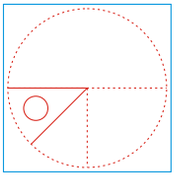
31. A paper sheet is folded in a particular manner and several punches (cuts) are made. When unfolded the paper sheet looks like the question figure (X). From the given options select the one that follows the manner in which the paper is folded and punched.

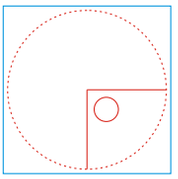
Question Figure

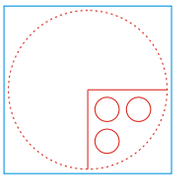


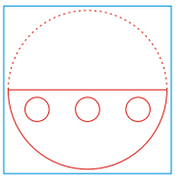
(X)

Answer Figures

(a) 

(b) 

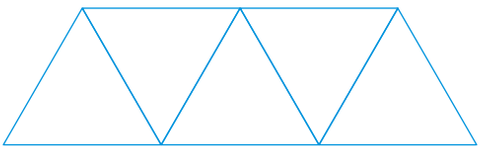
(c) 

(d) 

32. If English alphabet is written in backward order, then what will be the 13th letter to the left of the 3rd letter from right?

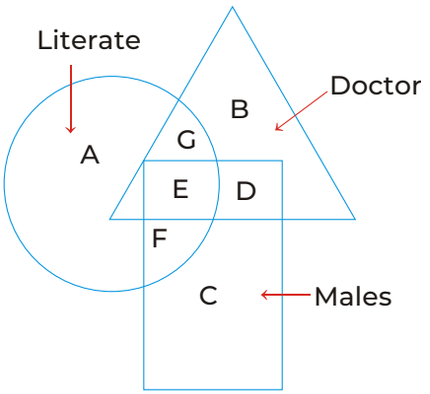
(a) P (b) N (c) R (d) Q

33. How many parallelograms are there in the following figure?



(a) 3 (b) 4 (c) 5 (d) 6

Direction (Q.No. 34) Study the figure given below carefully and answer the question that follows.

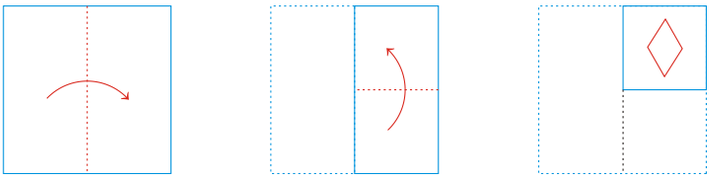


34. Which part shows Literate Males, who are Doctors?

(a) G (b) E (c) D (d) F

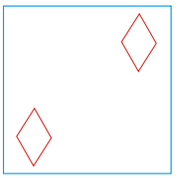
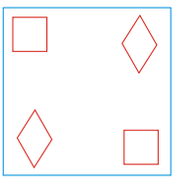
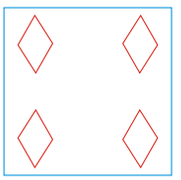
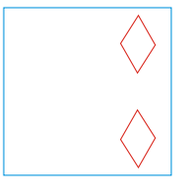
Direction (Q.No. 35) The given question consists of a set of three sheets (X), (Y) and (Z) as a question figures showing a sequence of folding a piece of paper. Sheet (Z) depict the manner in which the folded paper has been cut. From amongst the four answer sheets (a), (b), (c) and (d), choose the one showing the unfolded form of sheet (Z).

35. **Question Figures**



X Y Z

Answer Figures

(a) 
(b) 
(c) 
(d) 

36. If CUP = 40, then KITE = ?

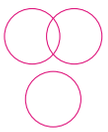
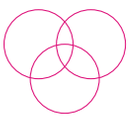
(a) 10 (b) 20 (c) 30 (d) 45

37. Pointing to a man, a lady said 'His mother is the only daughter of my mother'. How is the lady related to the man?

(a) Mother (b) Daughter
(c) Sister (d) Aunt

38. Identify the diagram that best represents the relationship among the given classes.

Tree, Branches, Root

(a) 
(b) 
(c) 
(d) 

Directions (Q.Nos. 39 and 40) Two statements are given in each of the following questions, followed by two conclusions I *and* II. You have to take the two statements to be true even, if they seems to be at variance from commonly known facts. Read the conclusions and then decide which of the given conclusion logically follows the given two statements, disregarding the known facts.

Give Answer

(a) If only Conclusion I follows
(b) If only Conclusion II follows
(c) If neither I nor II follows
(d) If both I and II follow

39. **Statements**

All huts are mansions.

All mansions are temples.

Conclusions

I. Some temples are huts.

II. Some temples are mansions.

40. **Statements**

Some camels are ships.

No ship is a boat.

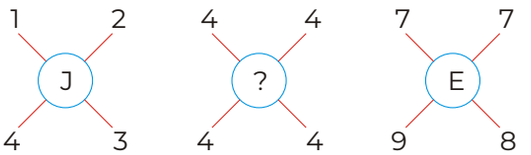
Conclusions

I. Some ships are camels.

II. Some camels are not boats.

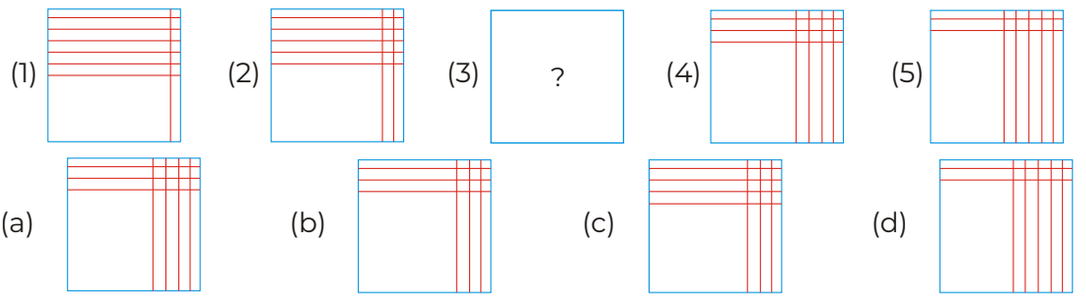
Section B (2 Marks Questions)

41. Identify the pattern in the given figures and determine which term replaces the question mark?



(a) O (b) A (c) P (d) S

42. Find the missing term in the series given below.



43. At what angle (larger) are two hands of a clock inclined at 48 min past 12?

(a) 264° (b) 263° (c) 265° (d) 266°

Direction (Q.No. 44) Read the following information carefully and answer the question which follow.

(i) 'P × Q' means 'P is brother of Q'.

(ii) 'P – Q' means 'P is mother of Q'.

(iii) 'P + Q' means 'P is father of Q'.

(iv) 'P ÷ Q' means 'P is sister of Q'.

44. Which of the following means 'M is niece of N'?

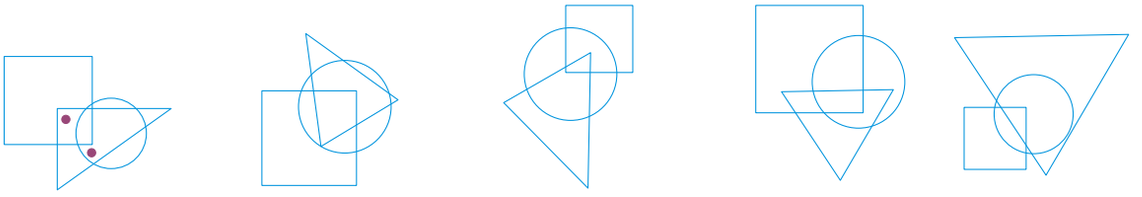
(a) M × R – N (b) N ÷ J + M ÷ D (c) N ÷ J + M (d) N × J – M ÷ D

45. In a certain code language, 'po ki top ma' means 'Usha is playing cards', 'kop ja ki ma' means 'Asha is playing tennis'. 'ki mop sop ho' means 'they are playing football' and 'po sun kop' means 'cards and tennis.' Which word in that langauge means 'Asha'?

(a) Ja (b) ma (c) kop (d) top

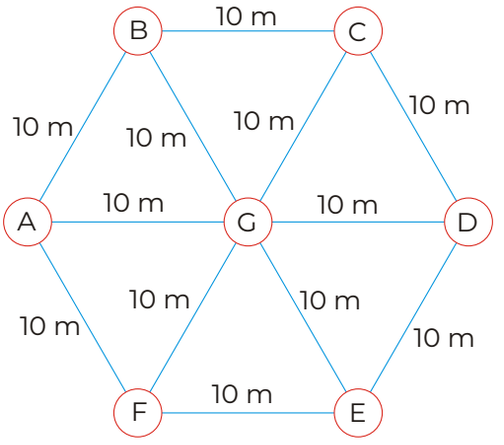
46. Choose the one figure from the four option figure, which best explains the characteristics given in question figure (X).

Question Figure **Answer Figures**



(X) (a) (b) (c) (d)

47. The given figure shows the map of seven interconnected nodes, A, B, C, D, E, F and G. Study the map and answer the following question.



Calculate the total distance travelled by Sunil in travelling from node A to E through nodes G and D.

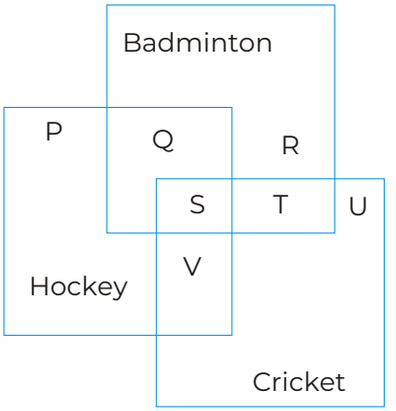
(a) 30 m (b) 20 m (c) 40 m (d) 10 m

48. Identify the rule that has been used to fill in the entries of the given square and then determine which one of the four given options will replace the question mark?

7	1	8
6	3	?
5	4	21

(a) 16 (b) 15 (c) 17 (d) 14

49. The given diagram represents those people who play hockey, cricket and badminton. study the diagram and find out those people who play all the three games.



(a) T + U (b) Q + R (c) P + Q + R (d) S

50. A clock is so placed that at 12 noon its minute hand points towards North-East. In which direction does its hour hand point at 1 : 30 pm?

(a) North (b) South (c) East (d) West

Solutions

1. (a) Here, the relation can be represented as

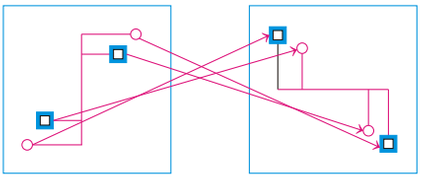
$$45 \div 3 + 5 = 15 + 5 = 20$$

In the same way,

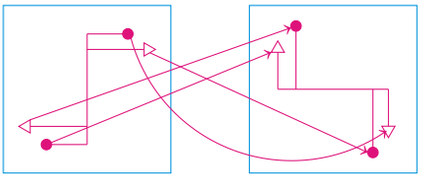
$$51 \div 3 + 5 = 17 + 5 = 22$$

Hence, option (a) is correct.

2. (d) Here, in first pair, each black box is converted into white dot and each white dot into black box and the figure is rotated 90° in clockwise direction as



Following the above pattern, we see that figure (d) will complete the second pair.



Hence, option (d) is correct.

3. (b) The series can be represented as,

$$23 \xrightarrow{+1} 24 \xrightarrow{+2} 26 \xrightarrow{+3} 29 \xrightarrow{+4} 33 \xrightarrow{+5} \boxed{38}$$

Here, we see that each time the number to be added [to obtain the successive term] is increased by 1.

Hence, option (b) is correct.

4. (d) Here, each letter of the word is moved 1 step backward of its position in the English alphabet to get the corresponding letters of the coded word CNVM.

As,

D	O	W	N
–1	–1	–1	–1
C	N	V	M

Similarly,

W	I	I	H
–1	–1	–1	–1
V	H	S	G

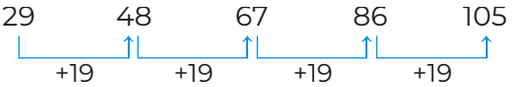
Thus, WITH would be coded as VHSG.

Hence, option (d) is correct.

5. (b) Just as a TELEPHONE, RINGS when a call comes, in the same way, when someone comes, he/she KNOCKS the DOOR.

Hence, option (b) is correct.

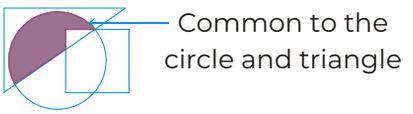
6. (d) The series can be represented as



So, the required number is 105.

Hence, option (d) is correct.

7. (c) In figure (X), the dot is placed in the region which is common to the circle and triangle. Now, we have to search similar common region in the four options. Only in figure (c), we find such a region which is common to the circle and triangle.



8. (a) Given expression, (50 Y 2) X (28 U 4)

After interchanging the letters with signs we get,

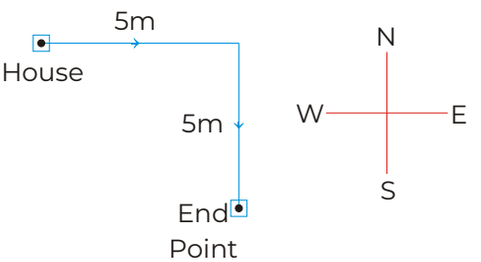
$$(50 \div 2) + (28 \times 4) = 25 + 112 = 137$$

9. (b) Here, the size of the upper design i.e. triangle is decreasing in each successive step and the size of the lower design i.e. rectangle is increasing in each successive step as shown :

The next term is similar to the figure given in option (b).

Hence, option (b) is correct.

10. (d) According to the question, direction diagram is as follows,



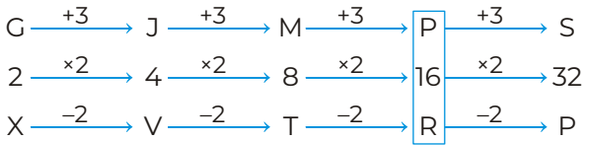
As seen from above diagram, Ram is facing towards the South direction.

Hence, option (d) is correct.

11. (c) As, $E \xrightarrow{+2} G$, $A \xrightarrow{+2} C$, $R \xrightarrow{+2} T$, $N \xrightarrow{+2} P$

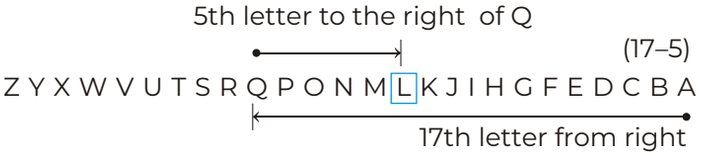
Similarly, $N \xrightarrow{+2} P$, $E \xrightarrow{+2} G$, $A \xrightarrow{+2} C$, $R \xrightarrow{+2} T$

12. (b) The pattern is as follows



So, the missing term will be P16R.

13. (c) Starting with A, we have to move 17th positions to the left and then back track 5th positions. So, the required letter is (17 – 5), i.e. 12 positions away from the right end, which is L.



Hence, option (c) is correct.

14. (b) Day 9 days ago → Thursday

$\therefore$ Today = Thursday + 9 = Thursday + 7 + 2

= Thursday + 2 = Saturday

15. (b) Here the given series is 0, 7, 26, 63, ?

As we can see that

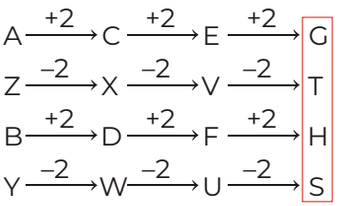
$$0 = 1^3 - 1$$
$$7 = 2^3 - 1$$
$$26 = 3^3 - 1$$
$$63 = 4^3 - 1$$

So, the next term will be

$$5^3 - 1 = 124$$

Hence, the missing term will be 124.

16. (d) The pattern of series is



17. (c) On finding the relation, we get

12 ★ 4 = 3 = 12 ÷ 4

27 ★ 9 = 3 = 27 ÷ 9

36 ★ 12 = 3 = 36 ÷ 12

So, the symbol '★' represents '÷'.

Hence, option (c) is correct.

18. (a) Information given in the question can be arranged as

	Cricket	Football	Hockey
Shaan	✓	✓	✓
Kunal	✓	✓	
Sonu	✓		✓
Abhishek			✓

It is clear from the above table that, Shaan is good in all the three games.

Hence, option (a) is correct.

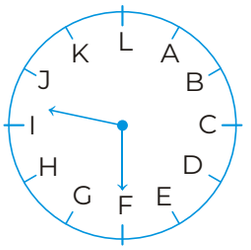
19. (a) By applying the interchanges from option (a), we get

$20 \div 4 + 6 \times 3 - 10 = 13 \Rightarrow 5 + 18 - 10 = 13 \Rightarrow 13 = 13$

The sign interchanges given in option (a) satisfy the given equation. So, there is no need to check further options.

Hence, option (a) is correct.

20. (c) The clock is as shown in given figure. Clearly at 9:30 am the hour hand will be between J and I.



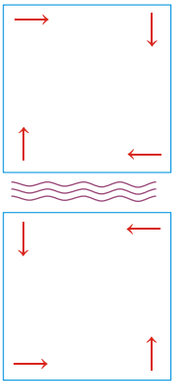
21. (d) We know that, required angle $= \frac{11}{2}\text{ min} - 30\text{ h}$

According to the question, here, min $= 40$ and h $= 3$

So, required angle $= \frac{11}{2} \times 40 - 30 \times 3 = 220 - 90 = 130°$

So, the hands of a clock are inclined at 3 h 40 min at 130°.

22. (a) In water image, the near point to water will be clear to water only and the far points will go more far from the given image.



23. (b) Here, first the total number of days are calculated, then this number is divided by 7 and thus the remainder obtained gives the total number of odd days.

We know that the number of days in an ordinary year is 365.

$\therefore \quad \frac{365}{7} = 52\frac{1}{7}$

Since, remainder is 1.

$\therefore$ Number of odd days $= 1$

Hence, option (b) is correct.

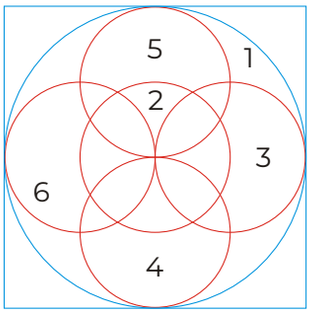
24. (a) From the top most row of the figure,

Cube in 1st row $= 1$, Cube in 2nd row $= 3$

Cube in 3rd row $= 6$

$\therefore$ Total number of cubes $= 1 + 3 + 6 = 10$

25. (a) There are two main circles and four smaller circles intersecting each other.



So, the total number of circles $= 2 + 4 = 6$

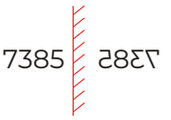
Hence, option (a) is correct.

26. (d) The face with 3 dots appears in each of the three positions. Clearly, the faces having 1, 2, 4 and 5 dots are adjacent to the face having 3 dots. The only face left is the one having 6 dots which lies opposite to the face having 3 dots.

Hence, option (d) is correct.

27. (c) The digits, individually will be seen in the mirror as :

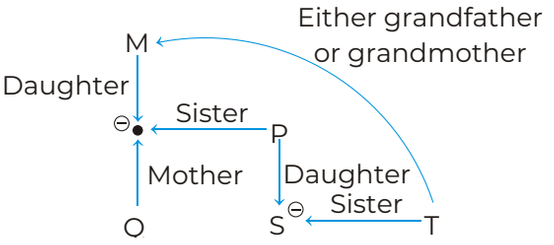
So, the correct mirror image of the number is



Hence, option (c) is correct.

28. (d) Except 11-170, in all others second number is a multiple of first number.

29. (d) We can summaries the information in a family tree

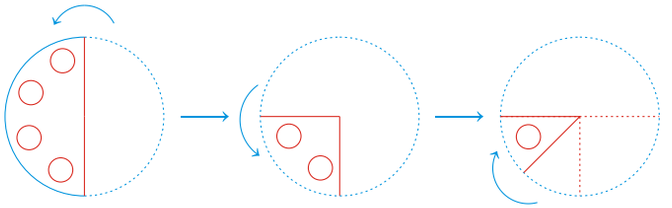


Hence, M is either the grandfather or the grandmother of T.

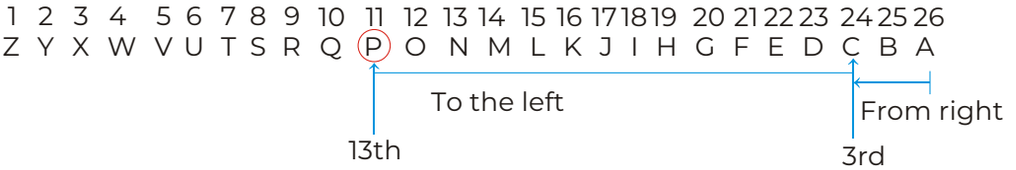
30. (d) Here, $\frac{21\div3}{24\div3}=\frac{7}{8}$; $\frac{28\div4}{32\div4}=\frac{7}{8}$; $\frac{14\div2}{16\div2}=\frac{7}{8}$ and $\frac{54\div2}{62\div2}=\frac{27}{31}\neq\frac{7}{8}$

Clearly, 54 : 62 is different from others.

31. (a) When we fold the question figure, then it looks like as answer figure (a).



32. (a) Backward order is written as

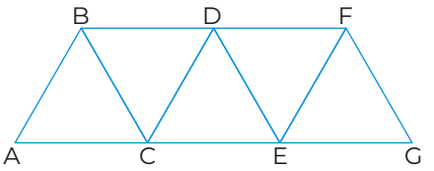


Therefore, the 13th letter to the left of the 3rd letter from right is P.

Alternate Method

In backward order of alphabet, 13th letter to the left of 3rd letter from right
= (3 + 13)th letter from right = 16 th from right = P

33. (d)

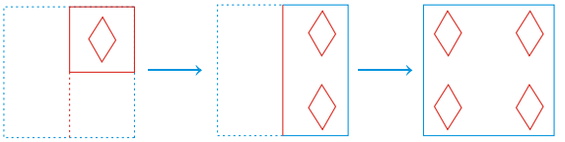


The above figure has following six parallelograms

▱ ABCD, ▱ ABFE, ▱ BCED, ▱ BCGF, ▱ CDEF and ▱ DEGF.

34. (b) To depict the required part, the figure should show the region common to all the three diagrams, i.e. E. E shows literate Males, who are Doctors.

35. (c) Upon unfolding the folded paper, represented by figure (Z), we get



Hence, option (c) is correct.

36. (d) Using forward letter positions

3 21 16

As, C U P $\Rightarrow 3+21+16=40$

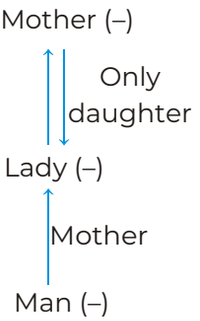
Similarly,

11 9 20 5

K I T E $\Rightarrow 11+9+20+5=$ 45

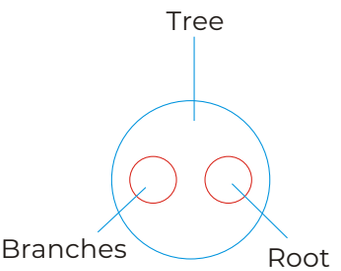
37. (a) The only daughter of lady's mother is the lady herself. So, she is the mother of the man.

By relation tree



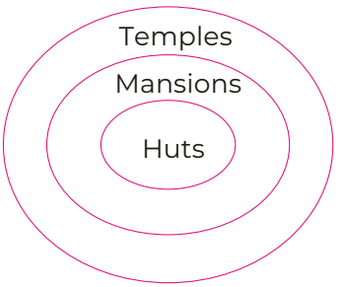
It is clear from the given diagram, that the lady is the mother of the man.

38. (b) According to the question,



Both branches and roots are the parts of a tree but both are not related to each other.

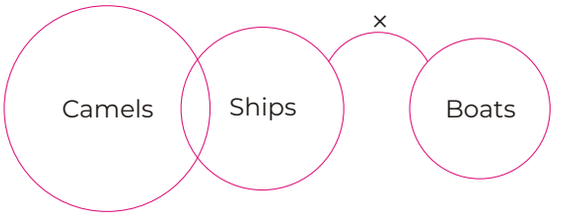
39. (d) This shows the case of universal affirmative proposition. So,



Conclusions I. ✓ II. ✓

Clearly, some temples are huts as well as some temples are mansions. So, both conclusions follow.

40. (d) According to the question,



Conclusions I. ✓ II. ✓

It is clear from diagram that both Conclusions I and II follow.

41. (c) In each of the given figures, all the numbers are added to give the positions of the letter (written in the middle) in the English alphabet.

In first figure, $1+2+3+4=10 \rightarrow J$

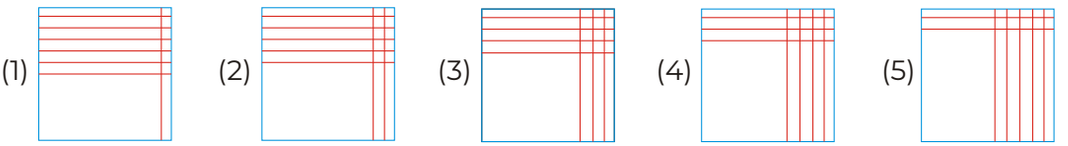
In third figure, $7+7+8+9=31=26+5 \rightarrow E$

Similarly, in second figure, $4+4+4+4=16 \rightarrow P$

So, 'P' replaces the question mark.

Hence, option (c) is correct.

42. (c) Here, in the square, the horizontal lines are decreasing by 1 and the vertical lines are increasing by 1 in each step as shown



The missing term is similar to the figure given in option (c).

Hence, option (c) is correct.

43. (a) The angle between minute and hour hand at 12 O'clock is 0°.

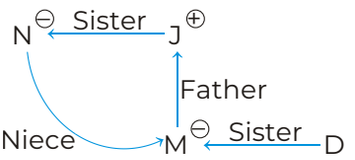
In 1 minute the angle changes by 5.5°.

So, in 48 minutes the angle changes by $48 \times 5.5° = 264°$

Hence, required angle $= 0° \sim 264° = 264°$

44. (b) M is niece of N. So, M is female. Here, option (a) is redundant. Also gender of M cannot be determined using option (c). Now, option (b), i.e.

$N \div J + M \div D$



So, option (b) represents that M is the niece of N.

45. (a) On the basis of given information,

Po ki top ma = Usha is playing cards ...(i)

Kop ja ki ma = Asha is playing tennis ...(ii)

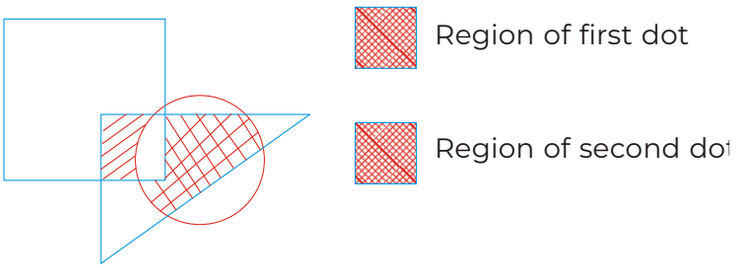
ki mop sop ho = they are playing football ...(iii)

Po sun kop = cards and tennis ...(iv)

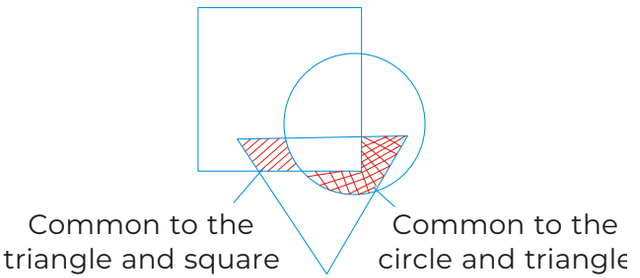
From Eqs. (i), (ii), (iii) and (iv), 'ja' means 'Asha'.

Hence, option (a) is correct.

46. (c) Here, one dot is placed in the common region between square and triangle and another dot is placed in the common region between triangle and circle as shown

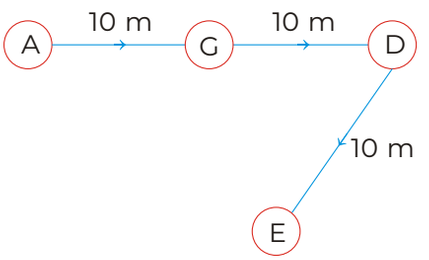


Now, from answer figures, option (c) represents such region as shown



Hence, option (c) is correct.

47. (a) Path travelled by Sunil in moving from node A to E through G and D will be



$\therefore$ Total distance travelled by Sunil $= 10 + 10 + 10 = 30$ m

Hence, option (a) is correct.

48. (b) In first row, $7+1^2=7+1=8$

In third row, $5+4^2=5+16=21$

Similarly, in the second row, $6+3^2=6+9=\boxed{15}$

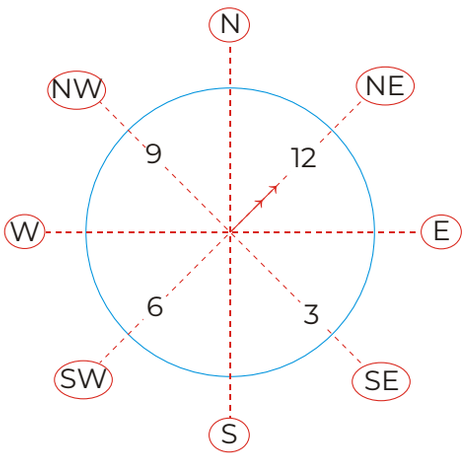
So, 15 will replace the question mark,

Hence, option (b) is correct.

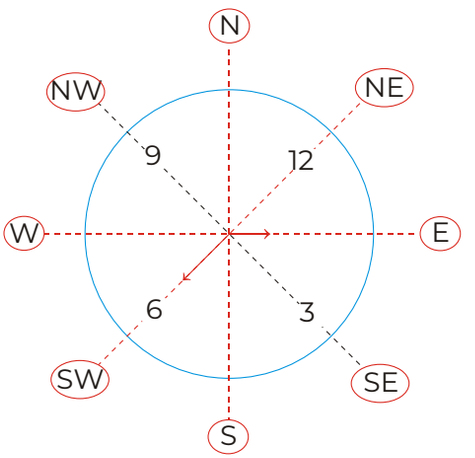
49. (d) S is that part which is common to all the three squares. It means that S represents those people who play all the three games.

50. (c) In this question, the clock is placed, so that at 12 noon its minute hand point towards North-East.

We know that minute and hour hand point in the same direction at 12 noon. Therefore, the clock will look some what like this.



12 : 00 Noon



1 : 30 PM

At 1 : 30 pm, the hour hand will point in the East direction.