

DEPARTMENT OF SCHOOL EDUCATION – TIRUVANNAMALAI DISTRICT

National Means-cum-Merit Scholarship (NMMS) EXAM-2023-24

PART-I MENTAL ABILITY TEST (MAT)

(Model Exam-3 For students of class VIII)

Time: 90 min.

Max marks: 90

Direction: (Questions 1 to 7)

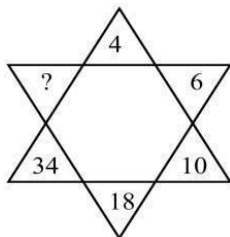
In each question, the numbers/letters are arranged based on some pattern or principle. Choose the correct answer for the term marked by the symbol (?)

1. **4, 18, ?, 100, 180, 294, 448**
 (1) 58 (2) 50 (3) 48 (4) 60
2. **132, 156, ?, 210, 240, 272**
 (1) 196 (2) 182 (3) 199 (4) 204
3. **11, 17, 39, 85, ?**
 (1) 133 (2) 143 (3) 153 (4) 163
4. **1, 2, 3, 10, ?, 9802**
 (1) 99 (2) 199 (3) 299 (4) 999
5. **8, 15, 28, 53, ?, 199**
 (1) 101 (2) 102 (3) 120 (4) 110
6. **A, D, H, M, ?, Z**
 (1) B (2) G (3) S (4) N
7. **ab - - - b - bbaa -**
 (1) abaab (2) abbab (3) baaab (4) babba

Direction: (Question No: 8 - 12)

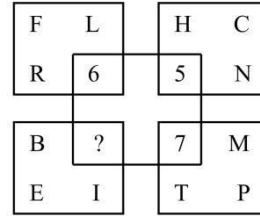
In each of the following figures, numbers are written according to some patterns. One number is missing. Find the missing number that replaces the question mark (?).

8.



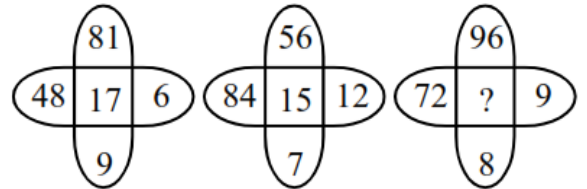
- (1) 60 (2) 62 (3) 64 (4) 66

9.



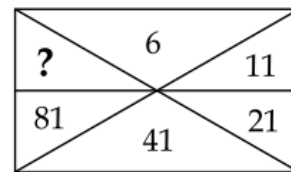
- (1) 4 (2) 9 (3) 8 (4) 12

10.



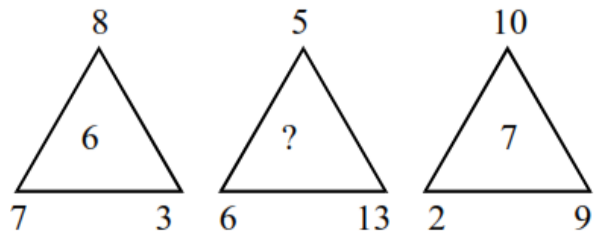
- (1) 19 (2) 17 (3) 18 (4) 20

11.



- (1) 4 (2) 161 (3) 138 (4) 141

12.



- (1) 8 (2) 4 (3) 5 (4) 7

Direction: (Question No: 13 - 17)

Each question consists of four groups. One group is different from the other three in some way. Find out the different group.

13. (1) Apple (2) Mango
(3) Watermelon (4) Guava
14. (1) 4, 64 (2) 7, 49
(3) 5, 125 (4) 13, 2197
15. (1) AYC (2) EUG (3) MMO (4) IQJ
16. (1) $\frac{2}{6}$ (2) $\frac{3}{12}$
(3) $\frac{5}{20}$ (4) $\frac{7}{28}$
17. (1) Rain (2) Mist (3) Smoke (4) Fog

Direction: (Question No: 18 - 21)

In the following questions, there are three words. The first two words to the left of (::) are related in some way. The same relationship holds between the third word to the right of the sign (::) and of the responses (1), (2), (3) or (4). Identify the correct related word.

18. Paw : Cat :: Hoof : ?
(1) Donkey (2) Lion
(3) Elephant (4) Horse
19. Horse : Jockey :: Car : ?
(1) Chauffeur (2) Steering
(3) Mechanic (4) Brake
20. Cow : Milk :: Bees : ?
(1) Silk (2) Honey
(3) Flower (4) Water
21. IJ : PR :: ? : SU
(1) IJ (2) LM
(3) EF (4) LI
22. 2 : 55 :: 6 : ?
(1) 99 (2) 44 (3) 9 (4) 33

23. In a certain code language COMPUTER is written as RFUVQNPC. How will MEDICINE be written in that code language?
(1) MFEDJJOE (2) EOJDEJFM
(3) MFEJDJOE (4) EOJDJEFM
24. If Z = 52 and ACT = 48, then BAT will be equal to
(1) 39 (2) 41
(3) 44 (4) 46
25. If ROSE is coded as 6821, CHAIR is coded as 73456 and PREACH is coded as 961473, what will be the code for SEARCH ?
(1) 246173 (2) 214673
(3) 214763 (4) 216473
26. If FRIEND is coded as HUMJTK, how is CANDLE written in that code ?
(1) EDRIRL (2) DCQHQB
(3) ESJFME (4) DEQJQM
27. If Z = 2197 and R = 729. How would J be written in that code?
(1) 216 (2) 225
(3) 512 (4) 125
28. According to a military code, SYSTEM is SYSMET and NEARER is AENRER. What is the code for FRACTION ?
(1) CARFTINO (2) CARFTION
(3) ARFCNOIT (4) CARFNOIT
29. If green means red, red means yellow, yellow means blue, blue means orange and orange means green, what is the colour of clean sky ?
(1) Blue (2) Green (3) Yellow (4) Orange
30. If YELL is coded as 2551212, then what will be the code for LENT?
(1) 1251421 (2) 1251420
(3) 1251620 (4) 1351420

31. Find the word that cannot be made using the letters of the word UNIFORMITY.
- (1) TINY (2) TORN
(3) RENT (4) FORM

Direction: (Question No. 32)

In the following question, a word has been given followed by four other words are of which can be formed by using the letters of the given word. Find that word.

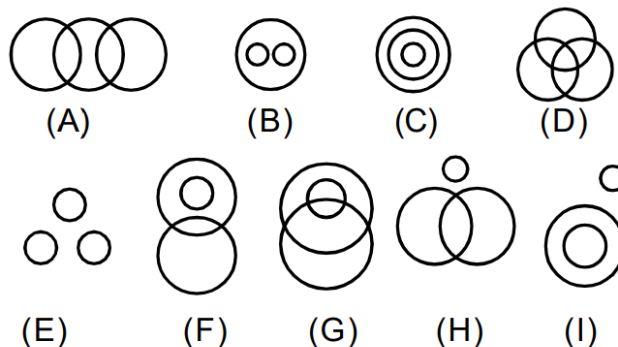
32. **RHINOCEROS**
- (1) RENAL (2) HIND
(3) SORL (4) HORSE
33. What will be the third letter of a meaningful English word which can be formed by using the first, the second, the third, the fifth, the ninth, the tenth and the last letters of the word EXTRAORDINARY, using each letter only once in each word? (To be counted from left)
- (1) T (2) A (3) X (4) Y
34. Arrange the following words in a meaningful sequence:
1. Adult 2. Child 3. Infant 4. Boy
5. Adolescent
- (1) 1, 3, 4, 5, 2 (2) 3, 2, 4, 5, 1
(3) 2, 3, 4, 1, 5 (4) 2, 3, 5, 4, 1

35. The correct arrangement of alphabetical order of the words.
- a. Eyelid b. Eyeless c. Eyesore d. Eyesight
- (1) a, b, d, c (2) d, a, c, b
(3) b, a, d, c (4) c, b, a, d

Direction: (Question No. 36 - 40)

There are given seven logical diagrams (A, B, C, D, E, F, G, H and I). Select one which best

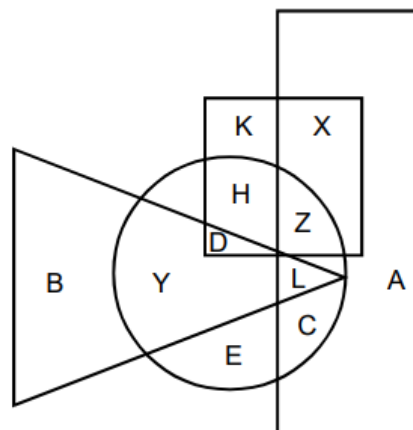
illustrates the relationship among three classes in each of the following question.



36. School, Teachers, Students
(1) C (2) D (3) B (4) E
37. Passengers, Train, Bus
(1) D (2) E (3) A (4) C
38. Females, Mothers, Engineers
(1) D (2) E (3) H (4) G
39. Writers, Lawyers, Singers
(1) A (2) D (3) F (4) H
40. Polygons, Quadrilaterals, Squares
(1) C (2) B (3) H (4) I

Direction: (Question No. 41 to 45)

The following questions are based on the given diagram below, in which each figure represents a group



- Circle represents person who use two wheelers,
- Square represents persons who use bikes,
- Triangle represents person who use car and
- Rectangle represents the persons who use bicycle.
- Answer the following questions.

41. which region represents the persons who use any one the vehicle to go to their office?

- (1) AEKY (2) ABEK (3) KXEY (4) CBEY

42. The letter which represents who use bus and bicycle but not two wheelers.

- (1) K (2) E (3) A (4) X

43. Which region represents any three of the vehicles to go their office?

- (1) DZ (2) HZ (3) DL (4) HL

44. Which region represents the persons who uses two wheelers but not bus to go to their office?

- (1) XK (2) AY (3) YL (4) XY

45. The number which represents who uses all vehicles?

- (1) D (2) L (3) H (4) C

46. If + means \div , - means \times , \div means +, \times means - then $36 \times 12 + 4 \div 6 + 2 - 3 = ?$

- (1) 2 (2) 18 (3) 42 (4) 34

47. P means '+', Q means '-', R means 'x', S means \div , then the value of the expression

$16 R 12 P 49 S 7 Q 9$ is

- (1) 100 (2) 190 (3) 110 (4) 182

48. The given equation becomes correct when symbols and number are interchanged as given in one of the options. Find the correct option

$$5 + 3 \times 8 - 12 \div 4 = 3$$

- (1) \div and \times (2) + and -
 (3) - and \div (4) \times and +

49. In the following list of numerals, how many 2's are followed by 1's but not preceded by 4?

4 2 1 2 1 4 2 1 1 2 4 4 4 1 2 2 1 2 1 4 4
 2 1 4 2 1 2 1 2 4 1 4 2 1 2 4 1 4 6

- (1) 2 (2) 3 (3) 4 (4) 5

50. If 'Sky' is called 'Sea', 'Sea' is called 'Water', 'Water' is called 'Air', 'Air' is called 'Cloud', and 'Cloud' is called 'River', then what do we drink when thirsty?

- (1) Sky (2) Air (3) Water (4) Sea

51. If Arun is the brother of the son of Kavin's son, what is the relationship between Arun and Kavin

- (A) Cousin (B) Brother
 (C) Nephew (D) Grandson

52. A is the sister of B. B is the brother of C. C is the son of D. then how D is related to A?

- (1) Daughter (2) Son
 (3) Uncle (4) Mother.

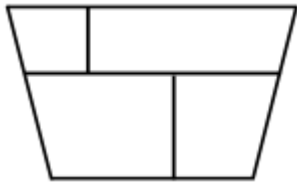
53. Dinesh is fourteenth from the right end and Mohan is eighteenth from the left end in a row of 40 boys. How many boys are there in between Dinesh and Mohan?

- (1) 6 (2) 8 (3) 7 (4) 9

54. A girl leaves from her home. She first walks 30m in North-West direction and then 30m in south west direction. Next, she walks 30m in south-East direction. Finally, she turns towards her house. In which direction is she standing?

- (1) North East (2) North West
 (3) South East (4) South West

55. Find the number of **trapezium** in the following figure



- (1) 5 (2) 6 (3) 4 (4) 7
56. The difference between the smallest four digit odd number and the greatest three digit even number is ____
- (1) 112 (2) 3 (3) 1 (4) 111
57. Seven members are standing in a line in an army parade. Q is on the left hand side of R and right hand side of P. O is on right hand side on N and left hand of P. S is On right hand side of R and left hand side of T. Then who is in the center of a line?
- (1) S (2) T (3) P (4) Q

Direction: (Question number 58 - 62)

Read the following information carefully and answer the questions given below:

- (i) Six person P, Q, R, S, T and U are sitting in two rows, three in each
- (ii) T is not at the end of any row.
- (iii) S is second to the left of U
- (iv) R is the neighbor of T, is sitting diagonally opposite to S.
- (v) Q is the neighbor of U
58. Which of the following are sitting diagonally opposite to each other
- (1) U and R (2) Sand P
(3) P and R (4) P and U
59. Who is facing Q?
- (1) P (2) R (3) T (4) S
60. Which of the following are in the same row?
- (1) P and T (2) Tand S
(3) R and Q (4) P and Q

61. Which of the following are in one row?
(1) UQR (2) RTQ (3) SQU (4) PTU
62. After interchanging the seats with T, who will be the neighbors of S in the new position
(A) R and P (B) Uand Q (C) only Q (D) only R
63. Kamal has 4 daughters each daughter has one brother. The minimum number of children for Kamal is
(1) 8 (2) 4 (3) 5 (4) 9
64. I was born on Gandhi Jayanthi in the year 2020. That day was my birthday (Friday). When day will be on 2021.
(1) Saturday (2) Wednesday
(3) Thursday (4) Friday
65. When the time is 4.30 am the angle between the hands of the clock is.
(1) 50° (2) 60°
(3) 45° (4) 30°

Direction: (Question Number 66 - 70)

Read the following information carefully and answer the questions given below it: A family consists of six members P, Q, R, X, Y and Z. Q is the son of R but R is not mother of Q. P and R are a married couple. Y is the brother of R. X is the daughter of P. Z is the brother of P.

66. Who is the brother-in-law of R?
(1) P (2) Z (3) Y 4) X
67. Who is the father of Q?
(1) R (2) P (3) Z (4) None of these
68. How many children does P have ?
(1) One (2) Two (3) Three (4) Four
69. How is Q related to X?
(1) Husband (2) Father (3) Brother (4) Uncle

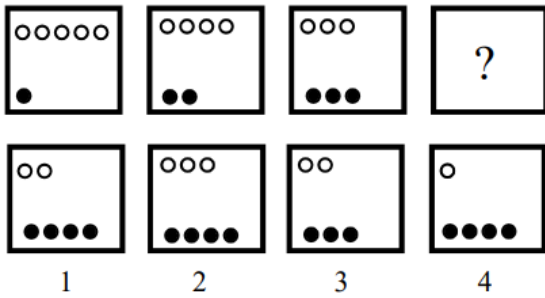
70. Which is a pair of brother?

- (1) P and X (2) Pand Z
- (3) Q and X (4) R and Y

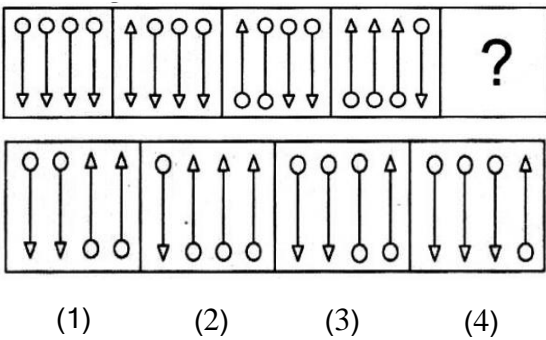
Direction: (Question No.: 71 - 74)

The following questions are based on the figures in series. Pick from the options what will come next.

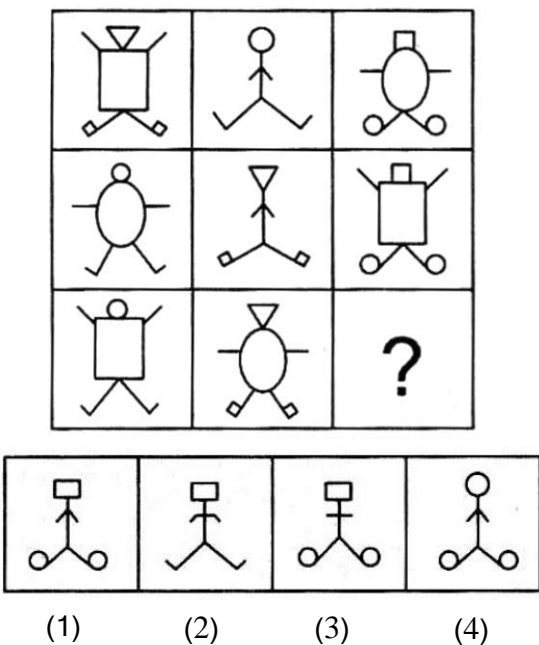
71.



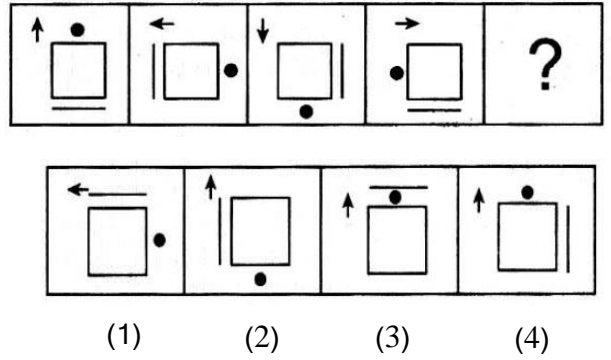
72.



73.



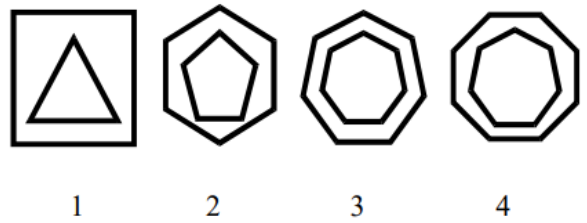
74.



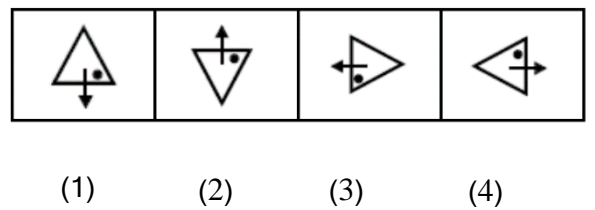
Direction: (Question No.: 75 - 78)

Find the figure which is not matching with others.

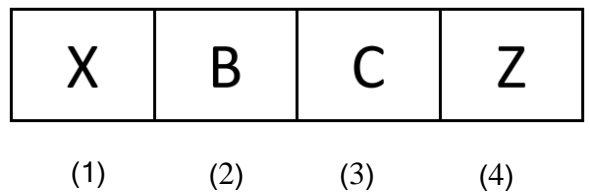
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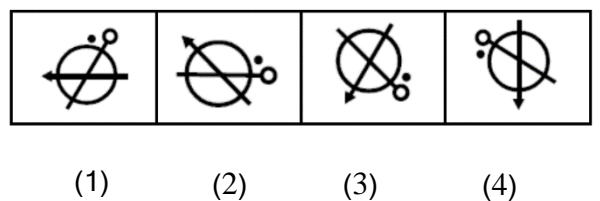
76.



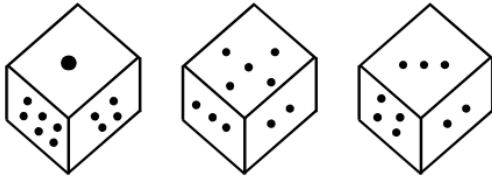
77.



78.



79. Three different positions of dice are shown below. Find the number of dots on the face opposite to the face bearing 1 dot ?



- (1) 2 (2) 3
(3) 4 (4) 5

80. In a seminar hall, if all to participants shake hand with each other, then how many shakes would have been made there?

- (1) 20 (2) 45 (3) 55 (4) 90

81. Find the water image of (image) (X)

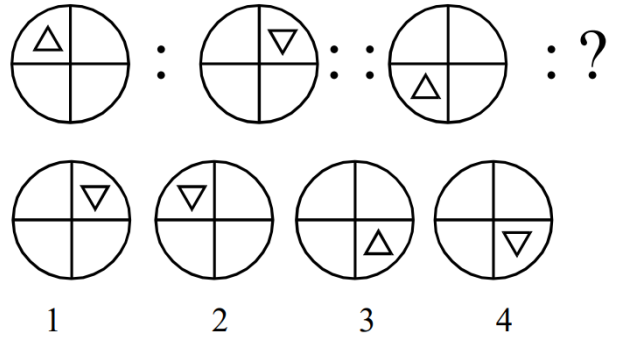


- (1) (2)
(3) (4)

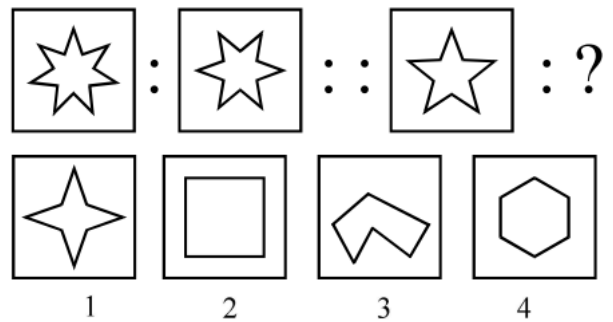
Direction: (Question No: 82 - 85)

In the each of the given figures, there is a relationship between first two figures (A) and (B). The same relation is between the next two figures (C) and (D), but one is missing. Find the missing figure from the given alternatives.

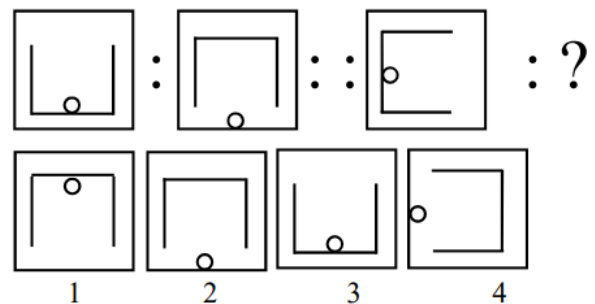
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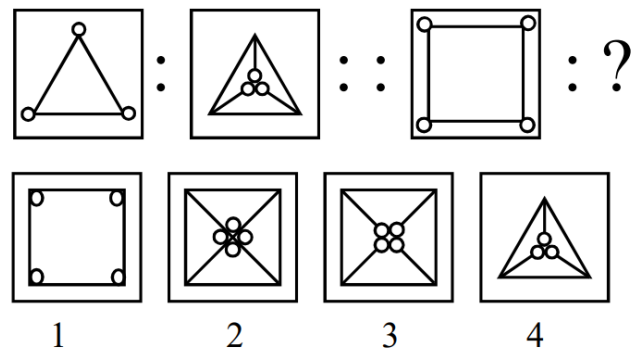
83.



84.



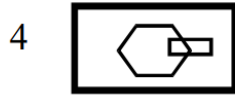
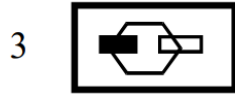
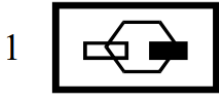
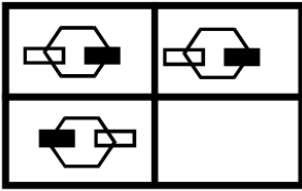
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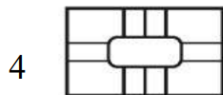
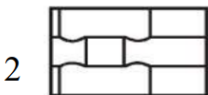
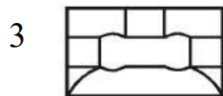
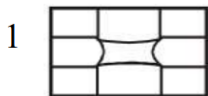
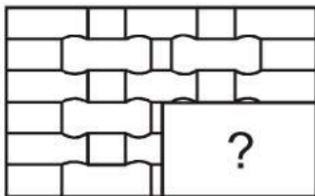
Direction: (Question Number 86 - 87)

In the following figures, a part of the figure is missing. Identify the missing part among the four alternatives given:

86.



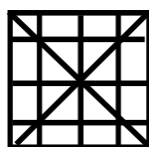
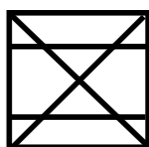
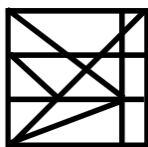
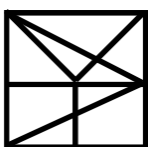
87.



88. The given figure (x) is followed by four figures 1, 2, 3, and 4 such that (x) is embedded in one of them. Trace out the correct alternatives.



(x)



1

2

3

4

89. The mirror image of following word is

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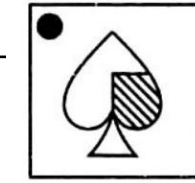
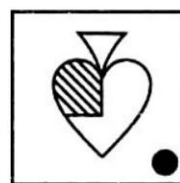
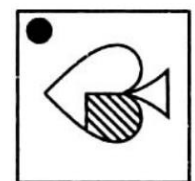
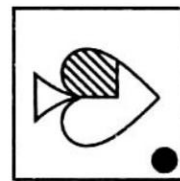
(1) QUNITITVAIUE

(2) EVITATITNAUQ

(3) QUNITITVAUQ

(4) EVITATITNAUQ

90. The mirror image of following (image)



(3)

(4)