

YanBo Free 11+ NVR Mock Test

Website: yanbo.co.uk

Subject: NVR

Categories selected: Shape Patterns; Rotations & Reflections; Codes & Spatial Logic

Difficulty selected: All difficulties

Time allowed: 40 minutes

Questions: 30

Student name:

Date completed:

Score:

Read the following with your child:

1. This is a multiple-choice paper. Mark only one answer for each question on the separate answer sheet.
2. Draw a firm line clearly through the rectangle next to your answer, like . If you make a mistake, rub it out completely and put in your new answer.
3. Keep your place in the correct section of the answer sheet. Mark your answer in the box with the same number as the question.
4. You may find some questions difficult. If you cannot do a question, do not waste time on it. Go on to the next one and choose the answer you think is best.
5. **Work as quickly and as carefully as you can.**

Free YanBo resource: This PDF is provided free by yanbo.co.uk.

You may print and share this unmodified resource for personal or educational use. Please do not resell it.

Questions

Question 1. Complete this multi-rule 3×3 matrix.



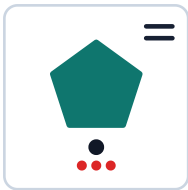
A.



B.



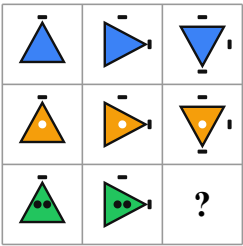
C.



D.



Question 2. Which option completes the pattern?



A.



B.



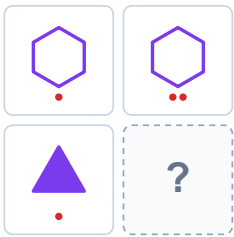
C.



D.



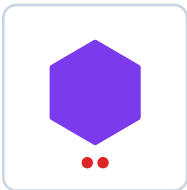
Question 3. Complete the 2×2 shape-and-dot pattern.



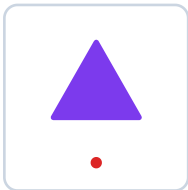
A.



B.



C.

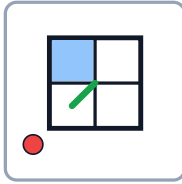


D.

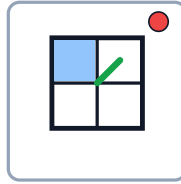


Question 4. Which option is the odd one out?

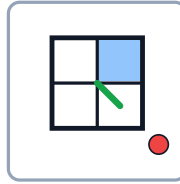
A.



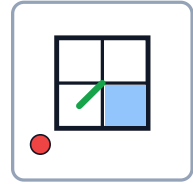
B.



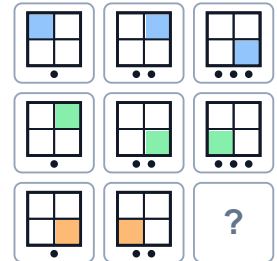
C.



D.



Question 5. Which box completes the 3 by 3 pattern?



A.



B.



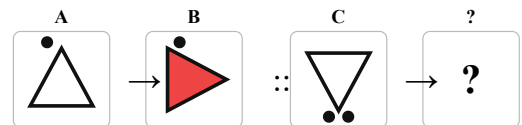
C.



D.



Question 6. A changes to B by a rule. Which option shows C changed by the same rule?



A.



B.



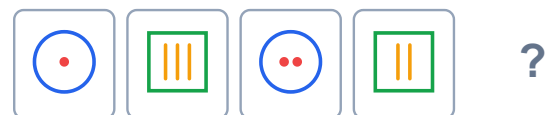
C.



D.



Question 7. Which box comes next?



A.



B.



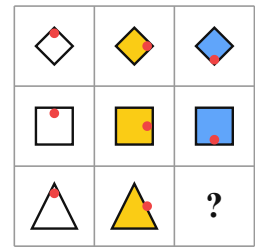
C.



D.



Question 8. Which option completes the pattern?



A.



B.



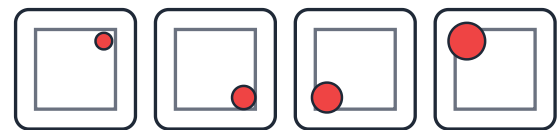
C.



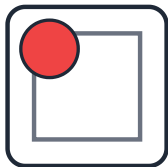
D.



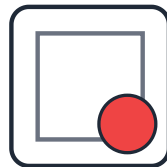
Question 9. Which box comes next?



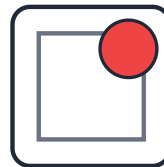
A.



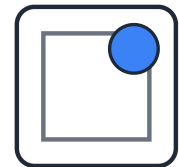
B.



C.

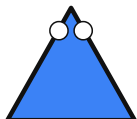


D.

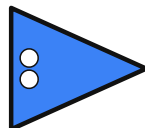


Question 10. Which option is the odd one out?

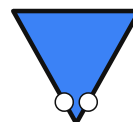
A.



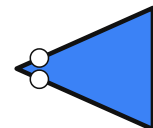
B.



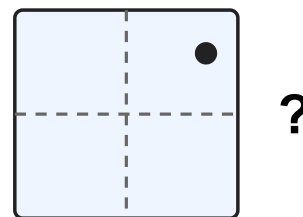
C.



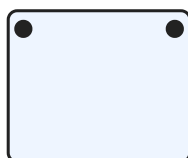
D.



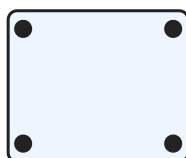
Question 11. The paper is folded along both dotted lines, punched once, then fully opened. Which hole pattern is produced?



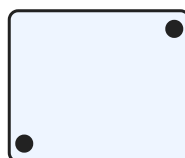
A.



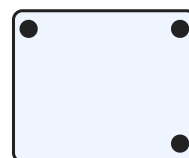
B.



C.



D.

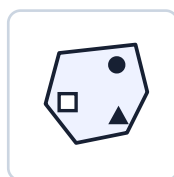


Question 12. A changes to B by an opposite-diagonal reflection followed by a 90° anticlockwise turn. Apply the same ordered pair of changes to C.

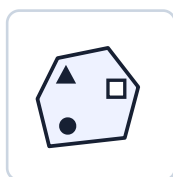
opposite-diagonal reflection then 90° anticlockwise



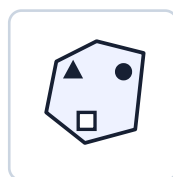
A.



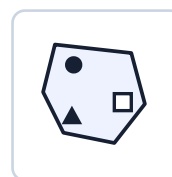
B.



C.



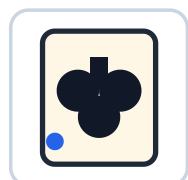
D.



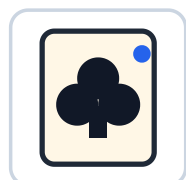
Question 13. Complete the 2×2 matrix. In each column, the lower card is the horizontal reflection of the upper card.



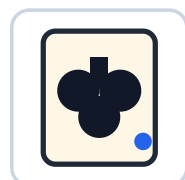
A.



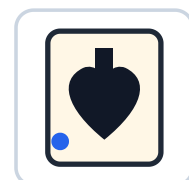
B.



C.

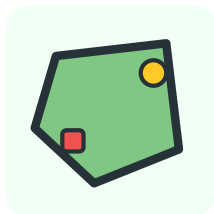


D.

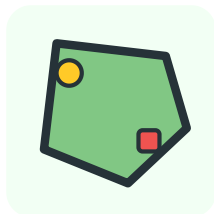


Question 14. Which option is the odd one out? Three are rotations of the same marked shape; one is a reflection.

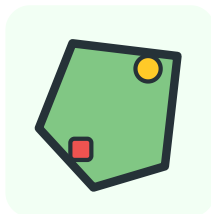
A.



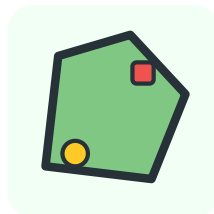
B.



C.



D.



Question 15. Reflect the figure in the horizontal mirror line. Which option is the exact mirror image?

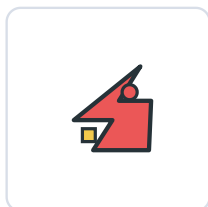


?

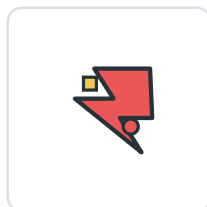
A.



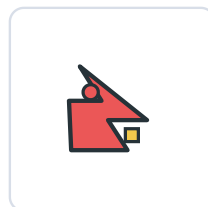
B.



C.



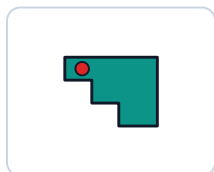
D.



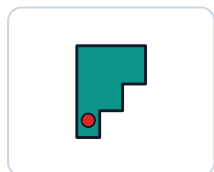
Question 16. Complete the 3×3 matrix. In every row, the stepped shape turns 90° clockwise as you move right.



A.



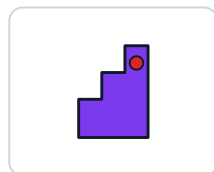
B.



C.



D.



Question 17. Which option is the odd one out? Three diamond cards are rotations of the same marked card; one is a reflection.

A.



B.



C.



D.



Question 18. The turns alternate: 90° clockwise, then 180° . Which option comes next?



A.



B.



C.



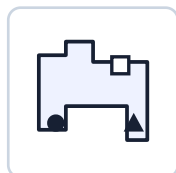
D.



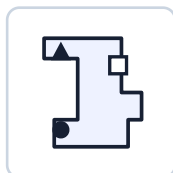
Question 19. The sequence follows two linked rules: diagonal reflections alternate with decreasing anticlockwise turns. Which tile comes next?



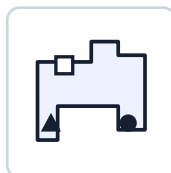
A.



B.



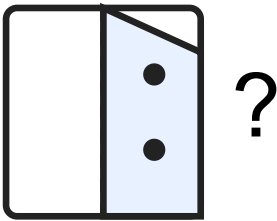
C.



D.



Question 20. The paper is folded along the dotted line and then opened. Which pattern of holes is seen?



- A.
- B.
- C.
- D.

Question 21. The machine uses $T(x, y) = (y + 2, 5 - x)$. What is $T(3, 1)$?

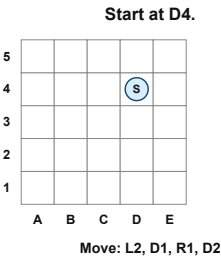
Coordinate machine

$$T(x, y) = (y + 2, 5 - x)$$

Input point: (3, 1)

- A. (2, 3)
- B. (3, 3)
- C. (2, 2)
- D. (3, 2)

Question 22. Starting at D4, follow the movement code. Which square is reached?



- A. B1
- B. D1
- C. B2
- D. C1

Question 23. What is the new order from positions 1 to 4?

Rule Z: old positions move to new positions
Read each row as "the item in OLD position ... moves to NEW position ...".

OLD position	NEW position
1	3
2	1
3	4
4	2

Start order: A B C D

- A. B A D C
- B. B D C A
- C. D B A C
- D. B D A C

Question 24. What is the least number of cubes possible?



- A. 6
- B. 4
- C. 3
- D. 5

Question 25. What is the target's three-part code?

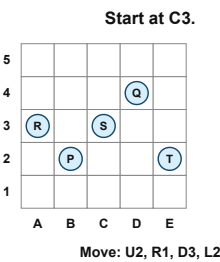
A three-part code records column, row, then arrow direction.

C2 facing north = M4N
E2 facing east = R4E
C5 facing east = M7E

TARGET
E5 facing north

- A. R4N
- B. M7N
- C. R7N
- D. R7E

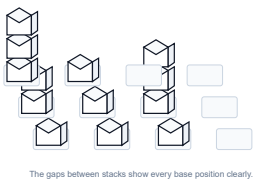
Question 26. Follow the movement sequence from S. Which labelled marker is reached?



- A. Q
- B. R
- C. P
- D. T

Question 27. What would this 3D shape look like from above?

Study the complete 3D arrangement
Every occupied base square is shown; stack height does not affect the top view.



- A.
- B.
- C.
- D.

Question 28. Which left-to-right order satisfies all three clues?

Four symbols stand in a row.

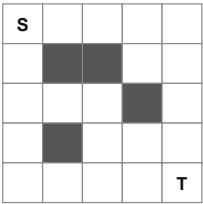


- R is left of S.
- T is immediately right of R.
- D is at the far right.

- A.** R S T D **B.** T R S D **C.** R T D S **D.** R T S D

Question 29. How many shortest routes from S to T avoid every dark square if movement is only right or down?

Shortest routes only



- A.** 6 **B.** 8 **C.** 10 **D.** 12

Question 30. Five crates P, Q, R, S and T fill the five spaces. Which crate must be in the middle space?

Which crate must be in space 3?



- T is in space 5.
R is immediately right of P.
Q is somewhere left of P.
S is not next to T.

- A.** P **B.** Q **C.** R **D.** S

End of questions

Student answer sheet

Name: _____

Date: _____

Test: YanBo Free 11+ NVR Mock Test

Score: _____ / 30

Draw one clear horizontal line through the rectangle next to your answer, like ☐ .

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 A ☐ B ☐ C ☐ D ☐	11 A ☐ B ☐ C ☐ D ☐	12 A ☐ B ☐ C ☐ D ☐	13 A ☐ B ☐ C ☐ D ☐	14 A ☐ B ☐ C ☐ D ☐	15 A ☐ B ☐ C ☐ D ☐	16 A ☐ B ☐ C ☐ D ☐
17 A ☐ B ☐ C ☐ D ☐	18 A ☐ B ☐ C ☐ D ☐	19 A ☐ B ☐ C ☐ D ☐	20 A ☐ B ☐ C ☐ D ☐	21 A ☐ B ☐ C ☐ D ☐	22 A ☐ B ☐ C ☐ D ☐	23 A ☐ B ☐ C ☐ D ☐	24 A ☐ B ☐ C ☐ D ☐
25 A ☐ B ☐ C ☐ D ☐	26 A ☐ B ☐ C ☐ D ☐	27 A ☐ B ☐ C ☐ D ☐	28 A ☐ B ☐ C ☐ D ☐	29 A ☐ B ☐ C ☐ D ☐	30 A ☐ B ☐ C ☐ D ☐		

Questions and Answers

Q	A	Explanation
1	D	The outer shape, dot count, fill, marker and bar count each follow their own shifted cycle, while each row has a fixed colour. Combining all row and column rules gives one unique missing card.
2	B	Rows set the colour and centre marks: blue has no mark, orange has one white dot, and green has two black dots. Columns set the triangle direction and bar count: up with 1 bar, right with 2 bars, down with 3 bars.
3	D	Across each row one dot is added. Moving down changes the hexagon to a triangle and changes outline to solid. The missing card is therefore a solid triangle with two dots.
4	A	In B, C and D, the red marker is one quarter-turn clockwise from the shaded quarter, and the green line points towards that marker. A breaks the positional rule, so A is the odd one out.
5	A	Across each row, the shaded quarter moves clockwise. Down the rows, the starting shaded quarter also moves one step clockwise and the colour changes. The columns contain 1, 2 and 3 dots respectively. The missing box therefore has the top-left quarter shaded orange with 3 dots, so the answer is A.
6	C	From A to B, the triangle turns 90 degrees clockwise and changes from white to red, while keeping its dots. Applying the same rule to C makes the down triangle turn left and become red, keeping its two dots.
7	A	There are two interleaved sequences. The circle panels contain 1, then 2, then 3 red dots. The square panels contain 3, then 2, then 1 orange lines. The next panel is therefore a circle with 3 red dots, so the answer is A.
8	D	Look at the three rules together. Down the rows, the outer shape changes from diamond to square to triangle. Across the columns, the colour changes from white to yellow to blue. The red dot also moves from top to right to bottom across each row. So the missing cell must be a blue triangle with the red dot at the bottom.
9	C	The dot moves one corner clockwise each step and grows larger each time. After top left, it moves to top right and increases in size again.
10	B	In A, C and D, the two white dots are beside the point of the triangle. In B, the dots are beside the flat back edge instead, so B is the odd one out.
11	B	The paper is unfolded across both fold lines. The punched hole is mirrored left-right and top-bottom, so four holes appear in matching symmetric positions. Option B is correct.
12	C	Carry out the opposite-diagonal reflection first and the 90° anticlockwise second. The transformed C matches option C.
13	A	The lower-left card is the top-bottom reflection of the upper-left card. Apply the same horizontal reflection to the upper-right club card: the blue dot moves from top-left to bottom-left. Option A matches.

Q	A	Explanation
14	A	B, C and D can be made by rotating the same marked pentagon. A reverses its handedness, so it is a mirror image rather than a rotation. Therefore A is the odd one out.
15	D	The reflection swaps top and bottom but does not swap left and right. Option D places the outline and both markers correctly.
16	C	The bottom row follows 180° , 270° , then 0° after another 90° clockwise turn. The row colour stays teal, so Option C is correct.
17	C	A, B and D are rotations of the same marked card. Option C is a left-right reflection, so the orange dot and purple corner marker are reversed rather than simply turned with the card.
18	B	The turn sizes alternate 90° clockwise and 180° . The next move is the 180° turn, so option B continues the sequence.
19	D	Continue the same operation pattern. The next change is a 90° clockwise, so the correct continuation is option D.
20	B	The holes are punched on the folded right side. When opened, each hole is mirrored across the vertical fold line, giving two matching pairs. Option B shows all four holes.
21	D	Substitute $x = 3$ and $y = 1$: $T(3, 1) = (1 + 2, 5 - 3) = (3, 2)$.
22	D	D4 -> B4 -> B3 -> C3 -> C1.
23	D	A moves to position 3, B to 1, C to 4 and D to 2, giving B D A C.
24	C	The front view needs three occupied positions and the side view also needs three occupied positions. The same three cubes can satisfy both views if they occupy three different rows and three different columns. No connected-solid condition is stated, so the least possible number is 3.
25	C	E gives R, row 5 gives 7 and north gives N, producing R7N.
26	C	C3 -> C5 -> D5 -> D2 -> B2, which is marker P.
27	C	From directly above, each occupied base position appears as one filled square, regardless of the height of its stack.
28	D	R must be left of S, T must sit immediately to the right of R, and D must be last. Only R T S D fits all clues.
29	A	Dynamic counting across the open cells gives 6 valid shortest right-and-down routes.
30	A	T must be fifth. Since R is immediately right of P and Q is left of P, P-R must occupy spaces 3-4. S cannot be next to T, so the first two spaces are Q and S in either order. P is therefore always in the middle. The answer is A.

End of answers