

Spatial Reasoning Assessment Answers

1. B. The number of dots in the middle is decreasing by 1 each step. The number of corners on the shapes in the top left and bottom right corners is decreasing by one in each step and are always black. The other shapes are rotating 180° in each step.
2. A. The two dots are rotating around the three points of the triangle in an anticlockwise direction. One dot moves in each step. The 6 triangles that comprise the central hexagon are subject to their own rules. The grey triangle at the base of the hexagon doesn't move, however it does become covered by black segments. The two black segments rotate clockwise by one position (60°) each step, while the single black segment rotates anticlockwise by 60° each step.
3. B. The arrows move around the square, 90° (one side) for each spear that the arrow has in each step. The dot is moving around the square anticlockwise, by an additional 90° per step.
4. A. The hatched area moves around by 180° each step, as does the black area. The grey area moves anticlockwise by 45° less each step. You might find it easier to count the segments instead of the degrees – the grey segment's first movement from step 1-2 is by 4 segments. From step 2-3 it moves by 3 segments etc.
5. D. The smaller square is rotating around the larger square 90° in a clockwise direction each step. The background to the square is alternating from white-black-grey. On top of the small square, there is always a white triangle. Inside the triangle, there is a white circle or a black star, with one appearing after the other in successive steps.
6. C. The balance beam cycles between being flat, tilted down to the right, and tilted down to the left. The shape on the left of the balance beam is replaced first by a new shape. This shape is random. In the next step, this same new shape that had appeared on the left then replaces the shape on the right of the beam.

7. C. The number of shapes is decreasing by one in each step, while the total number of sides is decreasing by 2.
8. A. The total number of shapes is increasing by 1 in each step, while the total number of sides is increasing by 3 per step.
9. C. The circle and rectangle swap places in each step. The rectangle cycles from grey to white to black, while the circle cycles from black to grey to white. The other three shapes interchange positions with one another: the triangle replaces the spiral, the spiral replaces the star and the star replaces the triangle.
10. D. The whole triangle rotates 90° clockwise in each step. The two dots always remain in the same place. The inner 6 triangles form their own hexagon. Within this hexagon, the grey triangles rotate 60° anticlockwise, and the black triangles rotate 60° clockwise.
11. A. There are three shapes inside the square at all times. The most outer shape (biggest), moves inward to become the middle layer, the middle layer moves in to become the most central layer, and then the most central layer disappears. Random new shapes appear each step as the most outward layer.
12. B. The four shapes alternate between each moving 90° anticlockwise around the square and rotating 180° . The number of the dots in the middle decreases by 1 square each time; i.e. from 4^2 to 3^2 to 2^2 etc.
13. C. Imagine that each of the smaller squares is itself broken up into 9 even smaller squares. There are four dots which follow their own individual patterns. Looking at the first step, the dot in the top left corner moves down three places in each step. The dot in the top right corner moves 1 place left each step. The dot in the right side of the middle row moves down one place and right one place each step. Finally the dot in the bottom left corner alternates between moving up one place or right one place.
14. D. The big hand is moving anticlockwise by an additional 30° in each step, and the smaller hand is moving by an additional 30° in a clockwise direction each step.
15. D. Each of the squares has its own pattern. Looking at the first grid, the square near the top left corner alternates between moving right one place and moving down one place. The square near the top right corner moves downward by an additional place each step. The square in column 6th from the left doesn't move.

The square that begins lowest moves upward one place per step. Finally, the square that begins in the column furthest to the right moves two places to the left each step.

16. A. The grey dot is moving around the square 90° per step in an anticlockwise direction. One additional piece of the pie is being coloured white in each step.
17. B. The total number of shapes decreases by one in each step. The total number of sides decreases by one in each step.
18. A. The circle with the arrow attached alternates between rotating 90° and moving to the left. The circle part alternates between being black and white.
19. C. 2 additional vertical bars are added in each step. Also, there is a single horizontal bar which alternates between being there and not being there.
20. A. The corner shapes alternate between swapping positions and then changing to another shape. The middle lollipop shape rotates clockwise by 90° less each step. Note, from the 1st to 2nd step, the lollipop rotated by 360° .
21. A. The A is rotating by 90° clockwise each step. Each of the other three letters are moving around the square, one place at a time. The U is leading the movements, such that each shape moves once every 3 steps.
22. B. There are three shapes which are in rotation between being above and below the dividing line (in the upper or lower triangle). The line rotates 90° every two steps. The triangle cycles from grey-white-black. The circle cycles from white to black.