



Inductive Reasoning Practice Test 1

Solution Booklet

Question 1

Solution: D

Explanation:

In this question, there are two rules to follow.

The first rule is that the spiral rotates 90° clockwise each time. Following this rule, the next diagram in the sequence should have the end of the spiral facing north. Therefore, the correct answer could be B or D.

The other rule is that the arrow alternates from pointing vertically upwards to vertically downwards. Following this rule, the next diagram in the sequence must have the arrow pointing vertically downwards. Therefore, the correct answer is D.

Question 2

Solution: A

Explanation:

In this question, there are four rows of squares, one with four squares, one with three squares, one with two squares and one with a single square.

There are also two rules to follow.

The first rule is that the rows of squares move one place down vertically each time, with the bottom row moving to the top. Following this rule, the next diagram in the sequence should have two squares in the top row, four in the next, one in the next and three squares in the bottom row. Therefore, the correct answer could be A or D.

The other rule is that the row containing a single square moves one place to the right each time, but the other rows do not move horizontally. Following this rule, the next diagram in the sequence must have the single square in the second column from the left. Therefore, the correct answer is A.

Question 3

Solution: D

Explanation:

In this question, there is a pattern of black, white and grey squares.

The rule in this case is that all the squares in the pattern move successively one square to the left and then in the next step they move one square up.

The correct answer is, therefore, D.

Question 4

Solution: B

Explanation:

In this question, there are two rules to follow.

The first rule is that the pattern of three circles rotates through 90° clockwise each time. Following this rule, the next diagram in the sequence should have circles in the top right, bottom right and bottom left corners. Therefore, the correct answer could be B or D.

The other rule is that the number of black circles increases from 1 to 2 to 3, then back to 1 again. Following this rule, the next diagram in the sequence must have 3 black circles. Therefore, the correct answer is B.

Question 5

Solution: C

Explanation:

In this question, there are two solid lines and one dotted line. The dotted line doesn't move. One solid line rotates 90° anticlockwise every time and the other solid line rotates 45° anticlockwise every time. Sometimes the solid lines cover and obscure the dotted line (as in the second diagram) or cover each other (as in the fifth diagram).

Following this rule, one solid line that was pointing towards the west in the fifth diagram will turn 90° anticlockwise and will point towards the south in the next diagram and the other solid line that was also pointing towards the west in the fifth diagram will turn 45° anticlockwise and will point towards the south-west in the next diagram. Therefore, the correct answer is C.

Question 6

Solution: D

Explanation:

In this question, there is a triangle, a square and a circle which each follow a rule.

The triangle alternates between the top left corner and the bottom right corner and is coloured white twice before changing colour, then black twice before changing colour again. Following this rule, the next diagram in the sequence should have a white triangle in the bottom right corner.

Therefore, the correct answer could be B or D.

The square moves clockwise around the eight main compass points and is coloured black twice before changing colour, then white twice before changing colour again. Following this rule, the next diagram in the sequence should have a black square in the top right corner (north-east) position. Therefore, the correct answer could be A, or D.

The circle stays in the same position and alternates between black and white. Following this rule, the next diagram in the sequence should have a white circle.

Therefore, the correct answer is D.

Question 7

Solution: C

Explanation:

In this question, there are three rules to follow.

The first rule is that the arrow rotates through 90° clockwise each time. Following this rule, the next diagram in the sequence should have the arrow pointing east-west. Therefore, the correct answer could be A, B, C or D.

The second rule is that the number of arrowheads increases by 1 each time, from 1 to 2 to 3, then back to 1. Following this rule, the next diagram in the sequence must have 3 arrowheads.

Therefore, the correct answer could be A or C.

The third rule is that the arrowheads alternately point to and away from the centre of the square. Following this rule, the next diagram in the sequence should have the arrowheads pointing away from the centre. Therefore, the correct answer is C.

Question 8

Solution: D

Explanation:

In this question, the black square follows a path of a knight's moves in chess – alternately its moves are:

- two squares down and one square to the right,
- then one square down and two squares to the right.

When it reaches the right edge of the grid, it continues from the left edge. When it reaches the bottom edge of the grid, it continues from the top edge.

Following this rule, from the fifth diagram the black square must move two squares down and one square to the right. The correct answer is, therefore, D.

Question 9

Solution: A

Explanation:

In this question, there are two rules to follow.

The first rule is that the diagonal of the hexagon rotates through 60° anticlockwise each time.

Following this rule, the next diagram in the sequence should have the diagonal drawn from the bottom left corner to the top right corner. Therefore, the correct answer could be A or C.

The other rule is that the black circle moves clockwise around the vertices of the hexagon, moving one place, then two places, then three places etc. Following this rule, in the next diagram in the sequence the black circle should have moved another five places clockwise, which takes it to the vertex of the hexagon at the extreme right. Therefore, the correct answer is A.

Question 10

Solution: B

Explanation:

In this question, there are two rules to follow. There are eight different patterns around the outside eight squares of the design.

The first rule is that the eight patterns rotate anticlockwise around the outside of the design. The first time, they all rotate one place anticlockwise, the second time two places, the third time three places and so on. Following this rule, the next diagram in the sequence could be any one of A, B, C or D.

The other rule is that patterns with contrasting colours – black and white, or grey and white, alternate from one diagram to the next e.g. the pattern with two stripes - white on the left and grey on the right - changes to grey on the left and white on the right in the next diagram. The patterns with diagonal and vertical lines do not change. Following this rule, the next diagram in the sequence must be B.