4.3 Matrices: 1-hour Pack

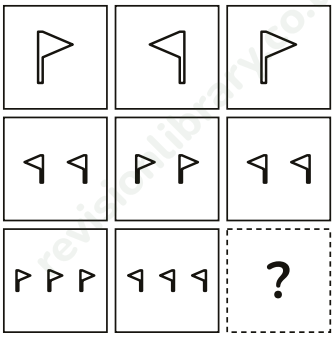
GL ASSESSMENT EP.N3 · Calculators not allowed · about 60 minutes

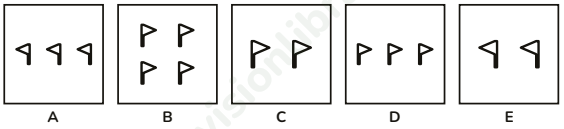
Total Marks

Name: _____ Date: ____ / ____ / _____

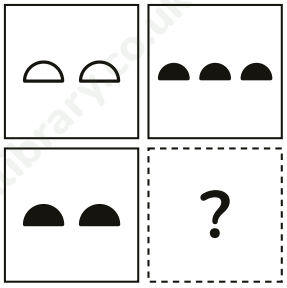
Answer ALL questions. Show all your working.

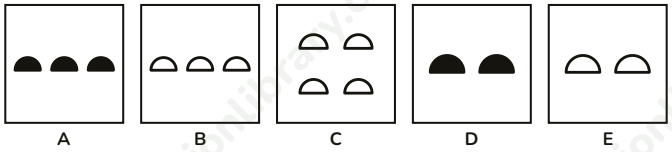
1 Study the 3x3 matrix of figures below. The bottom-right cell is missing, marked '?'. Which option completes the matrix?



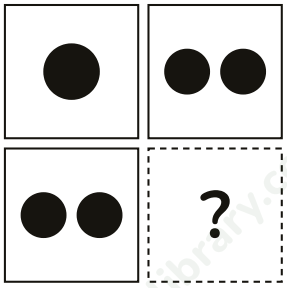


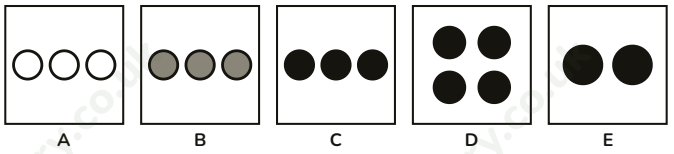
2 Study the 2x2 matrix of figures below. The bottom-right cell is missing, marked '?'. Which option completes the matrix?



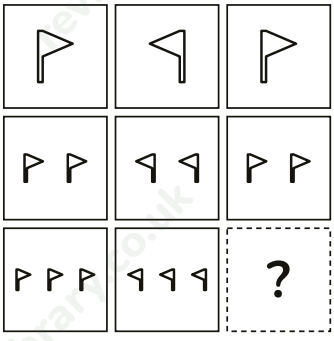


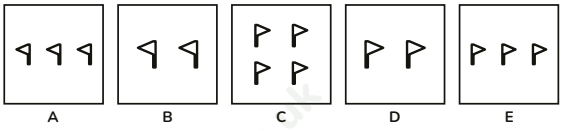
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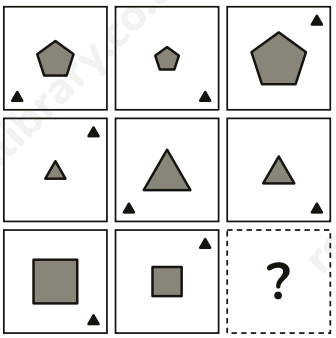
4 Study the 3x3 matrix of figures below. The bottom-right cell is missing, marked '?'. Which option completes the matrix?

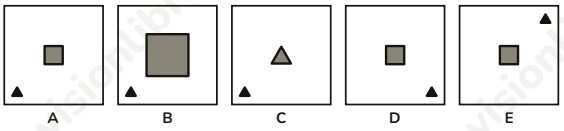




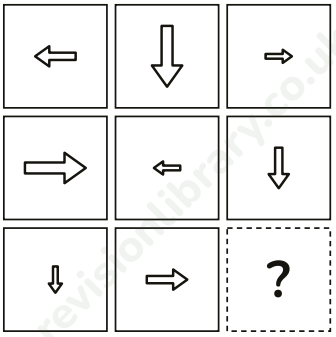
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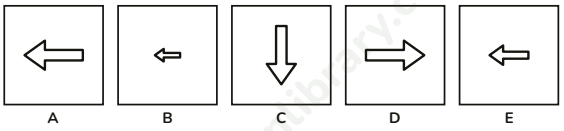
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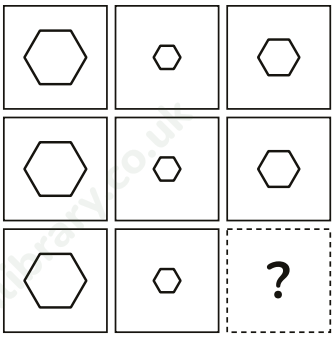


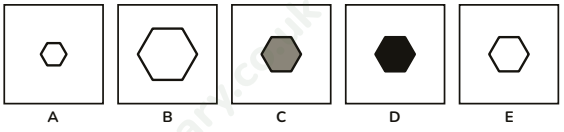
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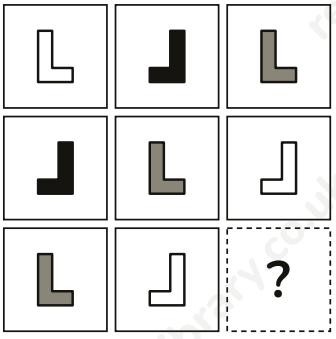


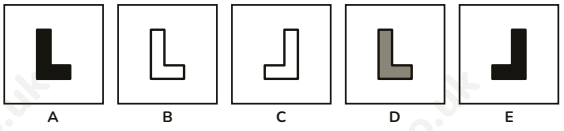
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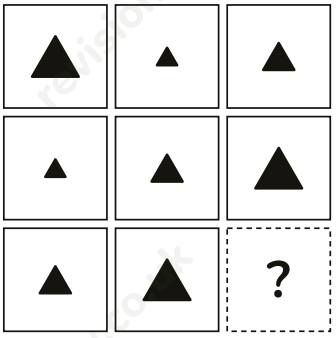


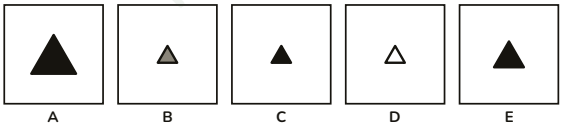
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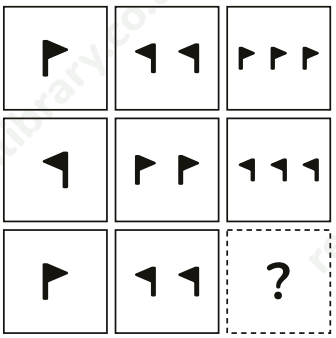
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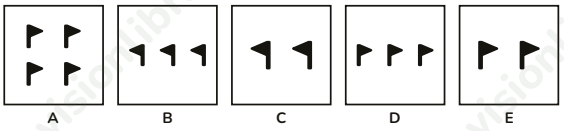




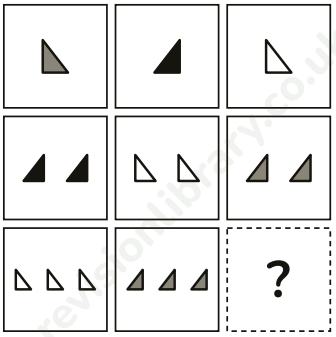
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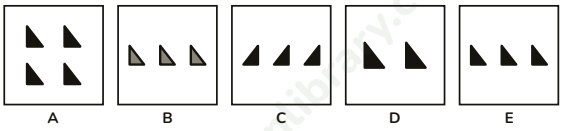
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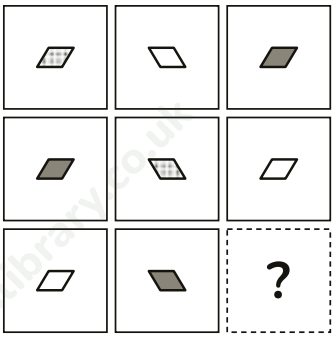


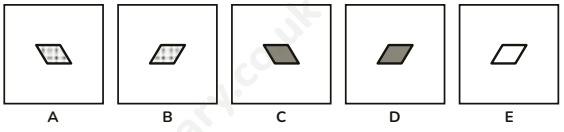
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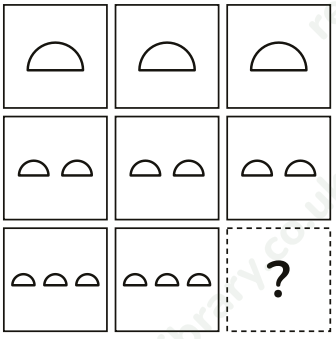


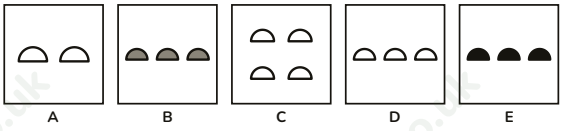
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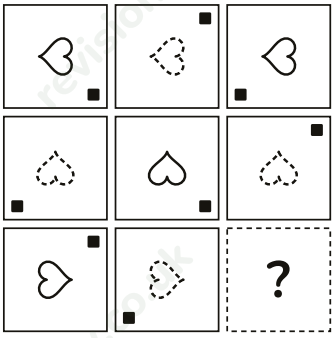


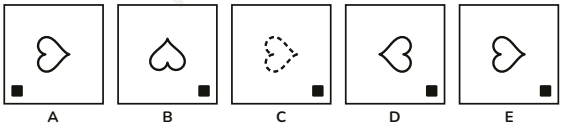
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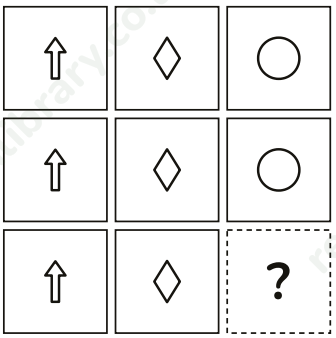
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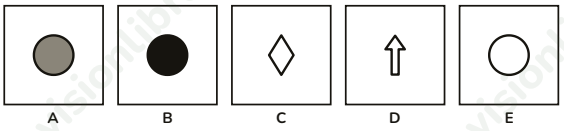




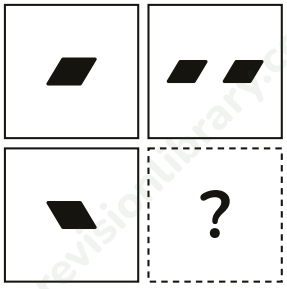
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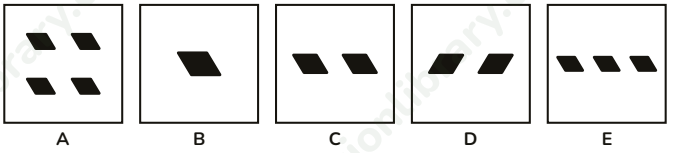
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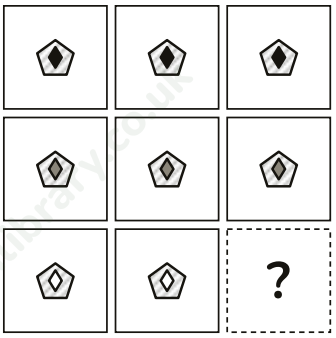


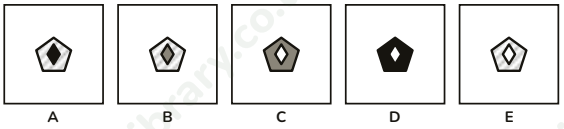
16 Study the 2x2 matrix of figures below. The bottom-right cell is missing, marked '?'. Which option completes the matrix?



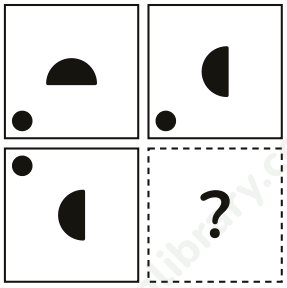


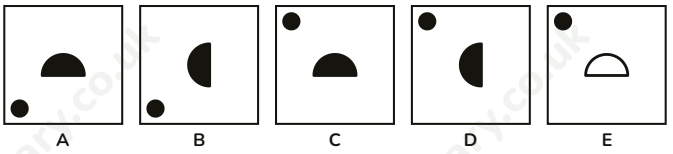
17 Study the 3x3 matrix of figures below. The bottom-right cell is missing, marked '?'. Which option completes the matrix?



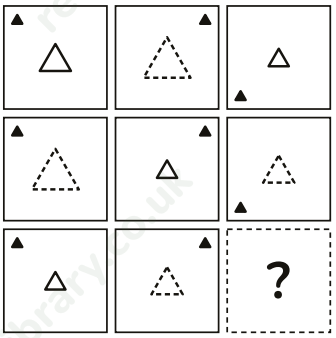


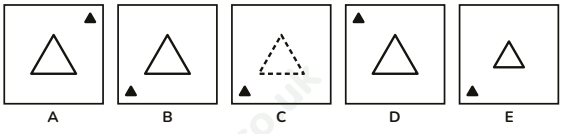
18 Study the 2x2 matrix of figures below. The bottom-right cell is missing, marked '?'. Which option completes the matrix?





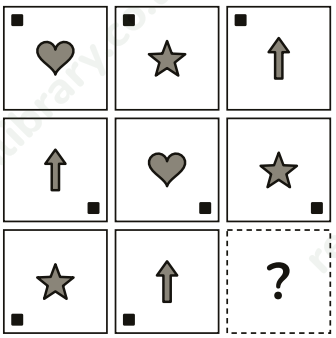
19 Study the 3x3 matrix of figures below. The bottom-right cell is missing, marked '?'. Which option completes the matrix?

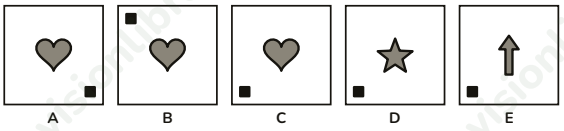




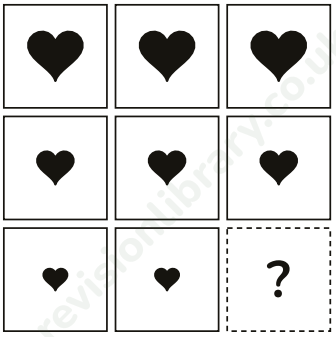
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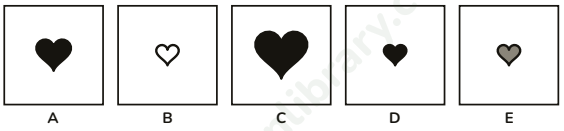
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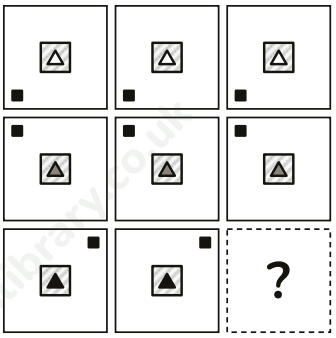


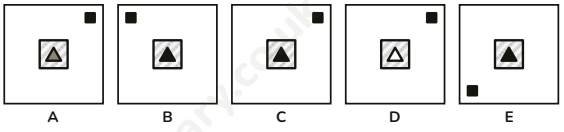
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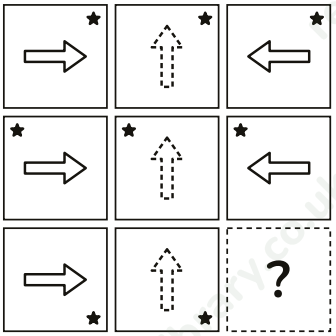


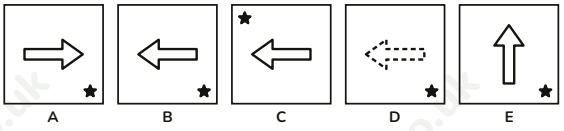
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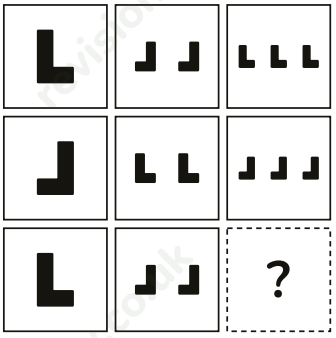


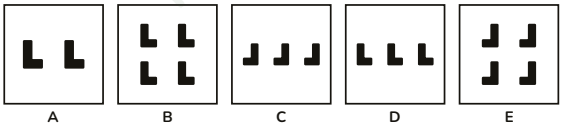
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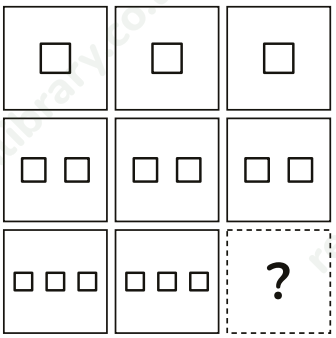
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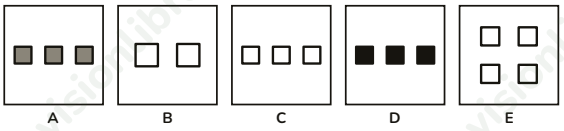




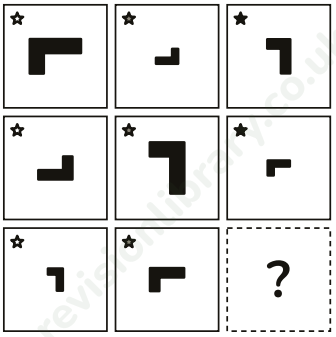
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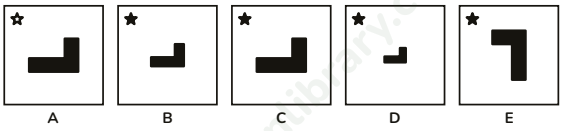
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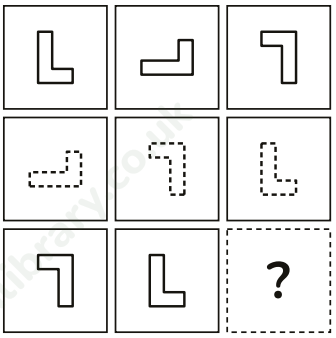


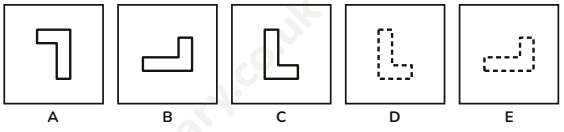
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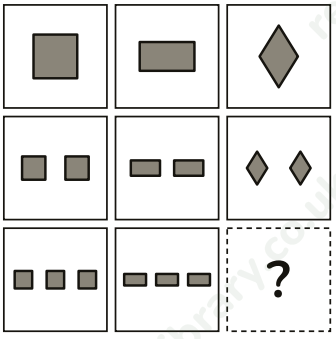


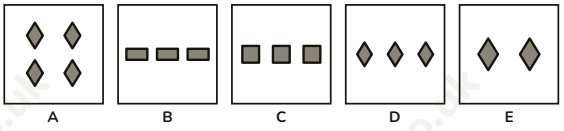
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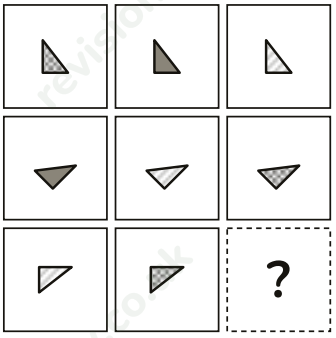


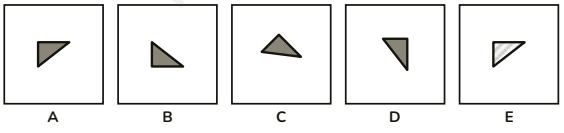
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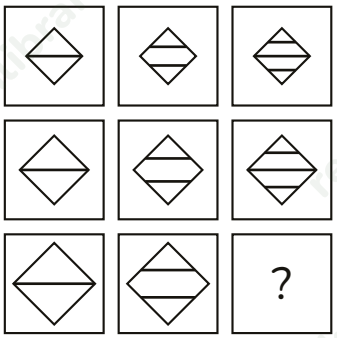
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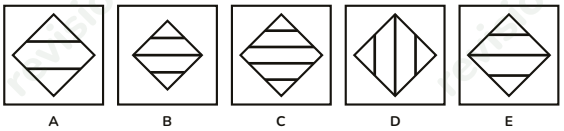




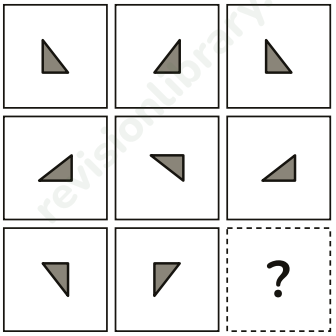
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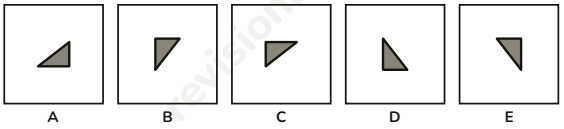
30 Study the 3x3 matrix of figures below. One rule links the figures across each row; a second rule links the figures down each column. The bottom-right cell is missing, marked '?'. Identify which option completes the matrix.



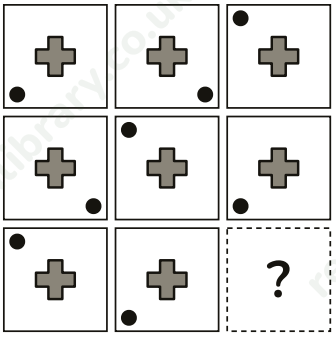


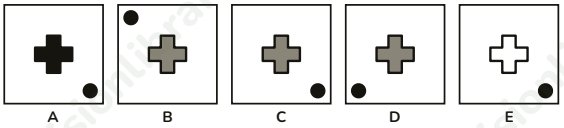
31 Study the 3x3 matrix of figures below. The bottom-right cell is missing, marked '?'. Which option completes the matrix?



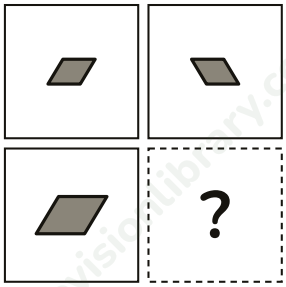


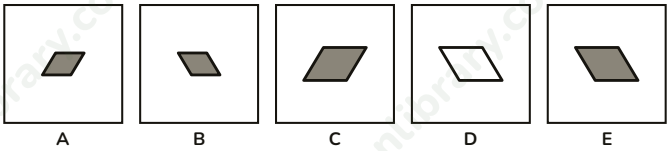
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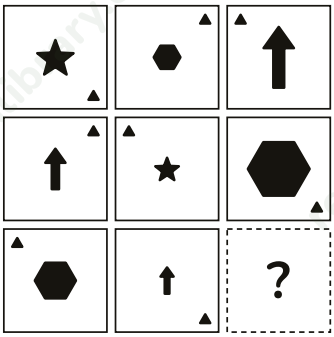
33 Study the 2x2 matrix of figures below. The bottom-right cell is missing, marked '?'. Which option completes the matrix?

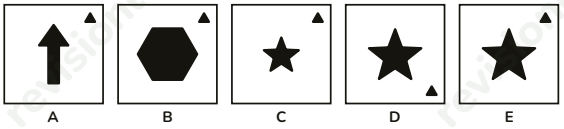




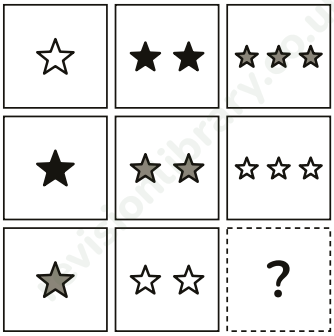
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34 Study the 3x3 matrix of figures below. The bottom-right cell is missing, marked '?'. Which option completes the matrix?



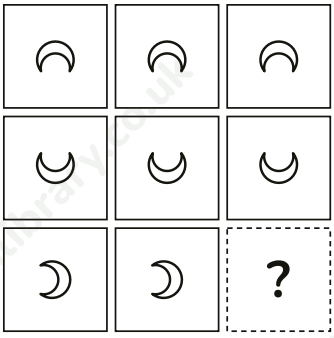


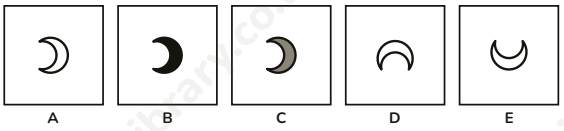
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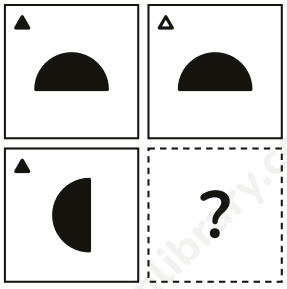


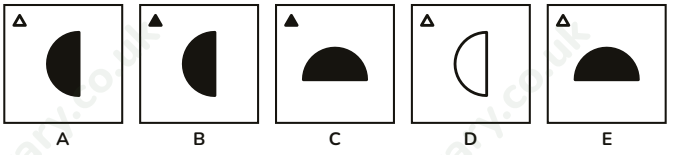
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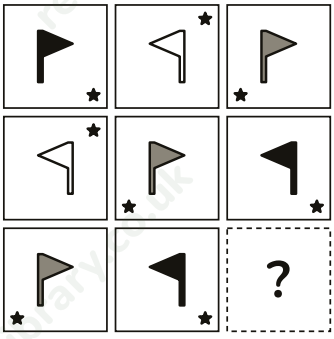


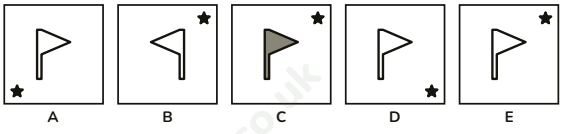
37 Study the 2x2 matrix of figures below. The bottom-right cell is missing, marked '?'. Which option completes the matrix?





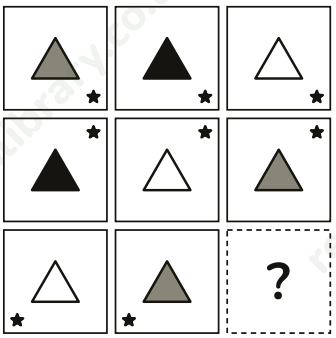
38 Study the 3x3 matrix of figures below. The bottom-right cell is missing, marked '?'. Which option completes the matrix?

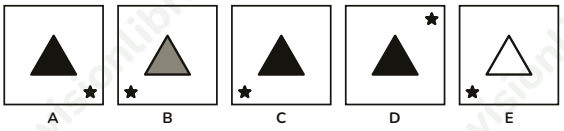




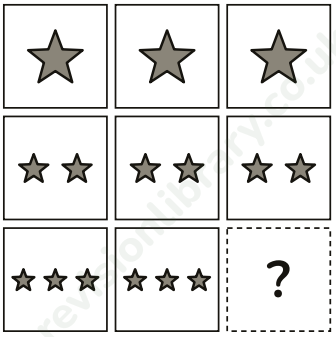
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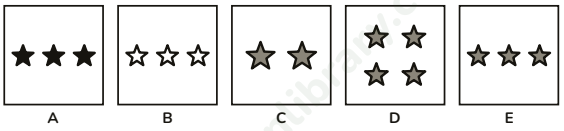
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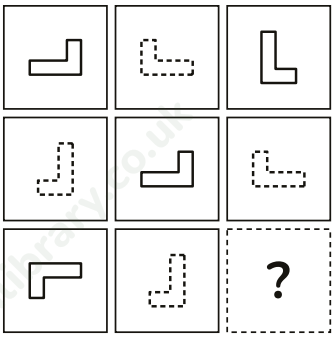


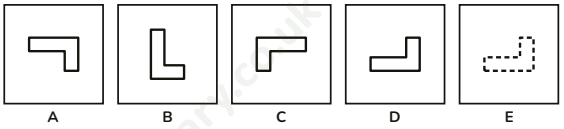
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41





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Mark scheme · 4.3 Matrices: 1-hour Pack

Question 1

selects option D: the number of shapes is the same along each row and changes from row to row; the mirror image alternates in a checkerboard pattern, which gives Three small unshaded (white) flags side by side in a row (upright, the flag has its pole on the left, pennant pointing right from the top) (cao) **B1**

Answer: D) Three small unshaded (white) flags side by side in a row (upright, the flag has its pole on the left, pennant pointing right from the top)

Question 2

selects option B: the shading alternates in a checkerboard pattern; the number of shapes is the same down each column and changes from column to column, which gives Three small unshaded (white) semicircles with their curved sides facing up side by side in a row (cao) **B1**

Answer: B) Three small unshaded (white) semicircles with their curved sides facing up side by side in a row

Question 3

selects option C: the number of shapes changes by the same step along rows and down columns, which gives Three small solid black circles side by side in a row (cao) **B1**

Answer: C) Three small solid black circles side by side in a row

Question 4

selects option E: the mirror image is the same down each column and changes from column to column; the number of shapes is the same along each row and changes from row to row, which gives Three small unshaded (white) flags side by side in a row (upright, the flag has its pole on the left, pennant pointing right from the top) (cao) **B1**

Answer: E) Three small unshaded (white) flags side by side in a row (upright, the flag has its pole on the left, pennant pointing right from the top)

Question 5

selects option A: the shape is the same along each row and changes from row to row; the size uses each value once in every row and every column; the position of the small shape uses each value once in every row and every column, which gives A small mid-grey square and a small solid black triangle with one point facing up in the bottom-left (cao) **B1**

Answer: A) A small mid-grey square and a small solid black triangle with one point facing up in the bottom-left

Question 6

selects option A: the size uses each value once in every row and every column; the orientation uses each value once in every row and every column, which gives A large unshaded (white) arrow pointing left (cao) **B1**

Answer: A) A large unshaded (white) arrow pointing left

Question 7

selects option E: the size is the same down each column and changes from column to column, which gives A medium unshaded (white) hexagon (upright, the hexagon has its flat top and bottom) (cao) **B1**

Answer: E) A medium unshaded (white) hexagon (upright, the hexagon has its flat top and bottom)

Question 8

selects option A: the mirror image alternates in a checkerboard pattern; the shading uses each value once in every row and every column, which gives A large solid black L-shape (upright, the L-shape has its tall arm on the left, foot pointing right along the bottom) (cao) **B1**

Answer: A) A large solid black L-shape (upright, the L-shape has its tall arm on the left, foot pointing right along the bottom)

Question 9

selects option C: the size uses each value once in every row and every column, which gives A small solid black triangle with one point facing up (cao) **B1**

Answer: C) A small solid black triangle with one point facing up

Question 10

selects option D: the number of shapes is the same down each column and changes from column to column; the mirror image alternates in a checkerboard pattern, which gives Three small solid black flags side by side in a row (upright, the flag has its pole on the left, pennant pointing right from the top) (cao) **B1**

Answer: D) Three small solid black flags side by side in a row (upright, the flag has its pole on the left, pennant pointing right from the top)

Question 11

selects option E: the number of shapes is the same along each row and changes from row to row; the shading uses each value once in every row and every column; the mirror image alternates in a checkerboard pattern, which gives Three small solid black right-angled triangles side by side in a row (upright, the right-angled triangle has its right angle at the bottom left, longer side along the bottom) (cao) **B1**

Answer: E) Three small solid black right-angled triangles side by side in a row (upright, the right-angled triangle has its right angle at the bottom left, longer side along the bottom)

Question 12

selects option B: the mirror image is the same down each column and changes from column to column; the shading uses each value once in every row and every column, which gives A medium dotted parallelogram (upright, the parallelogram has its long sides horizontal, slanting up to the right) (cao) **B1**

Answer: B) A medium dotted parallelogram (upright, the parallelogram has its long sides horizontal, slanting up to the right)

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Question 13

selects option D: the number of shapes is the same along each row and changes from row to row, which gives Three small unshaded (white) semicircles with their curved sides facing up side by side in a row (cao) **B1**

Answer: D) Three small unshaded (white) semicircles with their curved sides facing up side by side in a row

Question 14

selects option E: the orientation is the same along each row and changes from row to row; the outline style alternates in a checkerboard pattern; the position of the small shape uses each value once in every row and every column, which gives A medium unshaded (white) heart with its point facing right and a small solid black square in the bottom-right (cao) **B1**

Answer: E) A medium unshaded (white) heart with its point facing right and a small solid black square in the bottom-right

Question 15

selects option E: the shape is the same down each column and changes from column to column, which gives A medium unshaded (white) circle (cao) **B1**

Answer: E) A medium unshaded (white) circle

Question 16

selects option C: the number of shapes is the same down each column and changes from column to column; the mirror image is the same along each row and changes from row to row, which gives Two small solid black parallelograms (mirrored left to right) side by side in a row (upright, the parallelogram has its long sides horizontal, slanting up to the right) (cao) **B1**

Answer: C) Two small solid black parallelograms (mirrored left to right) side by side in a row (upright, the parallelogram has its long sides horizontal, slanting up to the right)

Question 17

selects option E: the shading of the inner shape is the same along each row and changes from row to row, which gives A medium diagonally hatched pentagon with one point facing up, with a small unshaded (white) diamond centred inside it (cao) **B1**

Answer: E) A medium diagonally hatched pentagon with one point facing up, with a small unshaded (white) diamond centred inside it

Question 18

selects option C: the orientation alternates in a checkerboard pattern; the position of the small shape is the same along each row and changes from row to row, which gives A medium solid black semicircle with its curved side facing up and a small solid black circle in the top-left (cao) **B1**

Answer: C) A medium solid black semicircle with its curved side facing up and a small solid black circle in the top-left

Question 19

selects option B: the outline style alternates in a checkerboard pattern; the size uses each value once in every row and every column; the position of the small shape is the same down each column and changes from column to column, which gives A large unshaded (white) triangle with one point facing up and a small solid black triangle with one point facing up in the bottom-left (cao) **B1**

Answer: B) A large unshaded (white) triangle with one point facing up and a small solid black triangle with one point facing up in the bottom-left

Question 20

selects option C: the position of the small shape is the same along each row and changes from row to row; the shape uses each value once in every row and every column, which gives A medium mid-grey heart with its point facing down and a small solid black square in the bottom-left (cao) **B1**

Answer: C) A medium mid-grey heart with its point facing down and a small solid black square in the bottom-left

Question 21

selects option D: the size is the same along each row and changes from row to row, which gives A small solid black heart with its point facing down (cao) **B1**

Answer: D) A small solid black heart with its point facing down

Question 22

selects option C: the shading of the inner shape is the same along each row and changes from row to row; the position of the small shape is the same along each row and changes from row to row, which gives A medium diagonally hatched square, with a small solid black triangle with one point facing up centred inside it and a small solid black square in the top-right (cao) **B1**

Answer: C) A medium diagonally hatched square, with a small solid black triangle with one point facing up centred inside it and a small solid black square in the top-right

Question 23

selects option B: the position of the small shape is the same along each row and changes from row to row; the outline style is the same down each column and changes from column to column; the orientation is the same down each column and changes from column to column, which gives A large unshaded (white) arrow pointing left and a small solid black star with one point facing up in the bottom-right (cao) **B1**

Answer: B) A large unshaded (white) arrow pointing left and a small solid black star with one point facing up in the bottom-right

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Question 24

selects option D: the number of shapes is the same down each column and changes from column to column; the mirror image alternates in a checkerboard pattern, which gives Three small solid black L-shapes side by side in a row (upright, the L-shape has its tall arm on the left, foot pointing right along the bottom) (cao) **B1**

Answer: D) Three small solid black L-shapes side by side in a row (upright, the L-shape has its tall arm on the left, foot pointing right along the bottom)

Question 25

selects option C: the number of shapes is the same along each row and changes from row to row, which gives Three small unshaded (white) squares side by side in a row (cao) **B1**

Answer: C) Three small unshaded (white) squares side by side in a row

Question 26

selects option C: the orientation uses each value once in every row and every column; the shading of the small shape is the same down each column and changes from column to column; the size uses each value once in every row and every column, which gives A large solid black L-shape (turned 270 degrees clockwise) and a small solid black star with one point facing up in the top-left (upright, the L-shape has its tall arm on the left, foot pointing right along the bottom) (cao) **B1**

Answer: C) A large solid black L-shape (turned 270 degrees clockwise) and a small solid black star with one point facing up in the top-left (upright, the L-shape has its tall arm on the left, foot pointing right along the bottom)

Question 27

selects option B: the outline style is the same along each row and changes from row to row; the orientation uses each value once in every row and every column, which gives A large unshaded (white) L-shape (turned 270 degrees clockwise) (upright, the L-shape has its tall arm on the left, foot pointing right along the bottom) (cao) **B1**

Answer: B) A large unshaded (white) L-shape (turned 270 degrees clockwise) (upright, the L-shape has its tall arm on the left, foot pointing right along the bottom)

Question 28

selects option D: the number of shapes is the same along each row and changes from row to row; the shape is the same down each column and changes from column to column, which gives Three small mid-grey diamonds side by side in a row (cao) **B1**

Answer: D) Three small mid-grey diamonds side by side in a row

Question 29

selects option A: the orientation is the same along each row and changes from row to row; the shading uses each value once in every row and every column; the mirror image is the same along each row and changes from row to row, which gives A medium mid-grey right-angled triangle (turned 90 degrees clockwise) (upright, the right-angled triangle has its right angle at the bottom left, longer side along the bottom) (cao) **B1**

Answer: A) A medium mid-grey right-angled triangle (turned 90 degrees clockwise) (upright, the right-angled triangle has its right angle at the bottom left, longer side along the bottom)

Question 30

Selects E: applies the row rule (line count 1,2,3 across columns) and the column rule (size small, medium, large down rows). **B1**

Answer: E

Question 31

selects option E: the mirror image is the same down each column and changes from column to column; the orientation is the same along each row and changes from row to row, which gives A medium mid-grey right-angled triangle (turned 180 degrees clockwise) (upright, the right-angled triangle has its right angle at the bottom left, longer side along the bottom) (cao) **B1**

Answer: E) A medium mid-grey right-angled triangle (turned 180 degrees clockwise) (upright, the right-angled triangle has its right angle at the bottom left, longer side along the bottom)

Question 32

selects option C: the position of the small shape uses each value once in every row and every column, which gives A medium mid-grey cross and a small solid black circle in the bottom-right (cao) **B1**

Answer: C) A medium mid-grey cross and a small solid black circle in the bottom-right

Question 33

selects option E: the mirror image is the same down each column and changes from column to column; the size is the same along each row and changes from row to row, which gives A large mid-grey parallelogram (mirrored left to right) (upright, the parallelogram has its long sides horizontal, slanting up to the right) (cao) **B1**

Answer: E) A large mid-grey parallelogram (mirrored left to right) (upright, the parallelogram has its long sides horizontal, slanting up to the right)

Question 34

selects option E: the position of the small shape uses each value once in every row and every column; the size is the same down each column and changes from column to column; the shape uses each value once in every row and every column, which gives A large solid black star with one point facing up and a small solid black triangle with one point facing up in the top-right (cao) **B1**

Answer: E) A large solid black star with one point facing up and a small solid black triangle with one point facing up in the top-right

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Question 35

selects option E: the number of shapes is the same down each column and changes from column to column; the shading uses each value once in every row and every column, which gives Three small solid black stars with one point facing up side by side in a row (cao) **B1**

Answer: E) Three small solid black stars with one point facing up side by side in a row

Question 36

selects option A: the orientation is the same along each row and changes from row to row, which gives A medium unshaded (white) crescent with its tips facing left (cao) **B1**

Answer: A) A medium unshaded (white) crescent with its tips facing left

Question 37

selects option A: the orientation is the same along each row and changes from row to row; the shading of the small shape is the same down each column and changes from column to column, which gives A large solid black semicircle with its curved side facing left and a small unshaded (white) triangle with one point facing up in the top-left (cao) **B1**

Answer: A) A large solid black semicircle with its curved side facing left and a small unshaded (white) triangle with one point facing up in the top-left

Question 38

selects option E: the shading uses each value once in every row and every column; the mirror image alternates in a checkerboard pattern; the position of the small shape uses each value once in every row and every column, which gives A large unshaded (white) flag and a small solid black star with one point facing up in the top-right (upright, the flag has its pole on the left, pennant pointing right from the top) (cao) **B1**

Answer: E) A large unshaded (white) flag and a small solid black star with one point facing up in the top-right (upright, the flag has its pole on the left, pennant pointing right from the top)

Question 39

selects option C: the shading uses each value once in every row and every column; the position of the small shape is the same along each row and changes from row to row, which gives A large solid black triangle with one point facing up and a small solid black star with one point facing up in the bottom-left (cao) **B1**

Answer: C) A large solid black triangle with one point facing up and a small solid black star with one point facing up in the bottom-left

Question 40

selects option E: the number of shapes is the same along each row and changes from row to row, which gives Three small mid-grey stars with one point facing up side by side in a row (cao) **B1**

Answer: E) Three small mid-grey stars with one point facing up side by side in a row

Question 41

selects option D: the mirror image alternates in a checkerboard pattern; the outline style alternates in a checkerboard pattern; the orientation uses each value once in every row and every column, which gives A large unshaded (white) L-shape (turned 270 degrees clockwise) (upright, the L-shape has its tall arm on the left, foot pointing right along the bottom) (cao) **B1**

Answer: D) A large unshaded (white) L-shape (turned 270 degrees clockwise) (upright, the L-shape has its tall arm on the left, foot pointing right along the bottom)

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