4.19 Combined and Hidden Shapes: 1-hour Pack

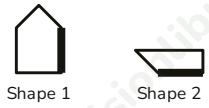
Total Marks

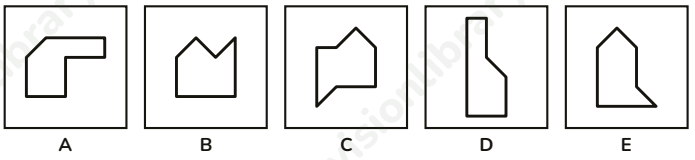
GL ASSESSMENT EP.N13 · Calculators not allowed · about 60 minutes

Name: _____ Date: ____ / ____ / _____

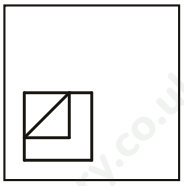
Answer ALL questions. Show all your working.

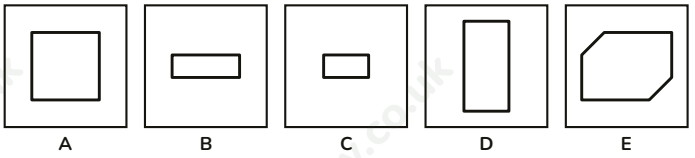
1 Shape 1 and Shape 2 are joined so that the thick edge of Shape 2 lies exactly along the thick edge of Shape 1. Shape 2 may be turned but not flipped over, and the shared edge disappears. Which option, A to E, shows the combined shape, with Shape 1 left where it is?



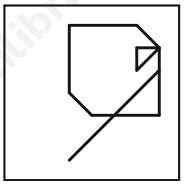


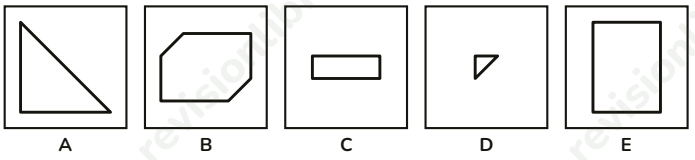
2 The figure below is made of straight lines only. Which one of the shapes A to E is hidden inside it, the same size and the same way up, with its whole outline traced along lines that are already drawn?



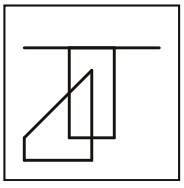


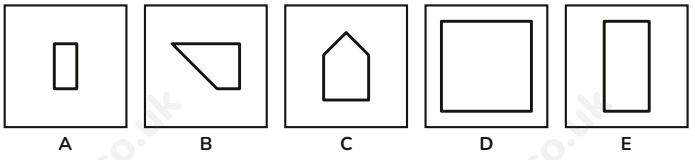
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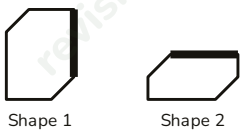


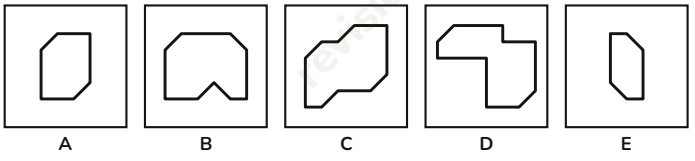
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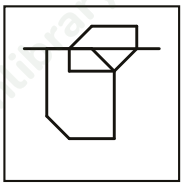
5 Shape 1 and Shape 2 are joined so that the thick edge of Shape 2 lies exactly along the thick edge of Shape 1. Shape 2 may be turned but not flipped over, and the shared edge disappears. Which option, A to E, shows the combined shape, with Shape 1 left where it is?

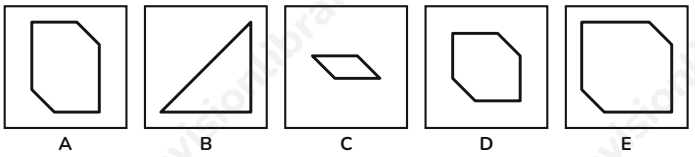




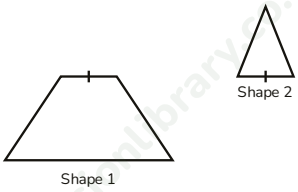
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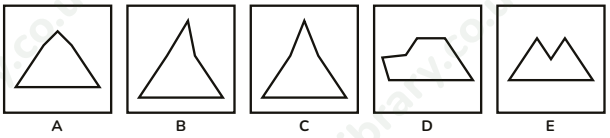
6 The figure below is made of straight lines only. Which one of the shapes A to E is hidden inside it, the same size and the same way up, with its whole outline traced along lines that are already drawn?



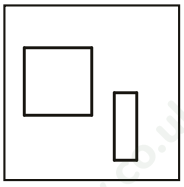


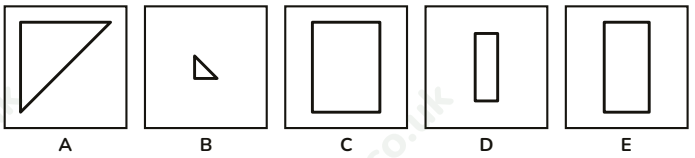
7 Shape 1 and Shape 2 below are joined so that the marked edge of Shape 2 lies exactly along the marked edge of Shape 1 (the shared edge is erased). Which option, A to E, shows the resulting combined shape?





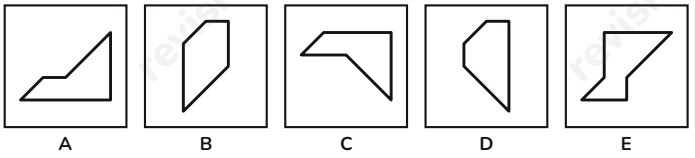
8 The figure below is made of straight lines only. Which one of the shapes A to E is hidden inside it, the same size and the same way up, with its whole outline traced along lines that are already drawn?



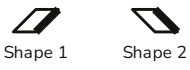


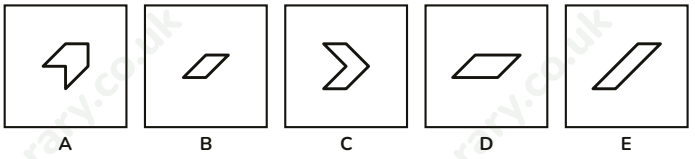
9 Shape 1 and Shape 2 are joined so that the thick edge of Shape 2 lies exactly along the thick edge of Shape 1. Shape 2 may be turned but not flipped over, and the shared edge disappears. Which option, A to E, shows the combined shape, with Shape 1 left where it is?



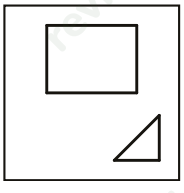


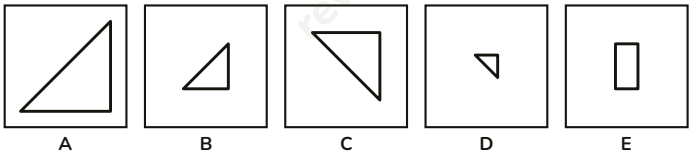
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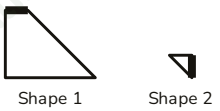
11 The figure below is made of straight lines only. Which one of the shapes A to E is hidden inside it, the same size and the same way up, with its whole outline traced along lines that are already drawn?

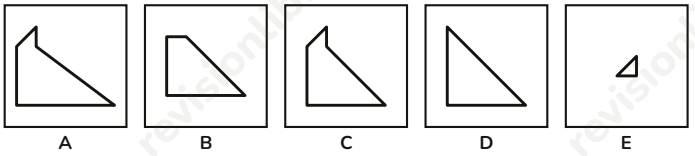




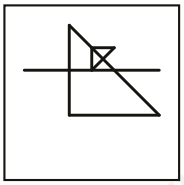
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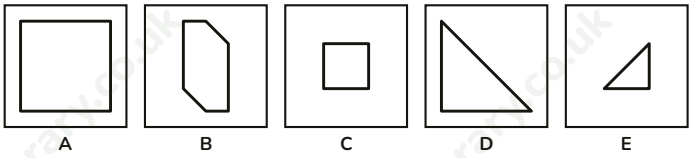
12 Shape 1 and Shape 2 are joined so that the thick edge of Shape 2 lies exactly along the thick edge of Shape 1. Shape 2 may be turned but not flipped over, and the shared edge disappears. Which option, A to E, shows the combined shape, with Shape 1 left where it is?



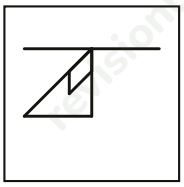


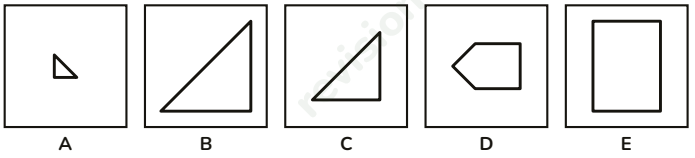
13 The figure below is made of straight lines only. Which one of the shapes A to E is hidden inside it, the same size and the same way up, with its whole outline traced along lines that are already drawn?



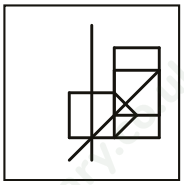


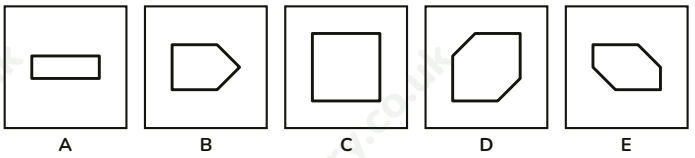
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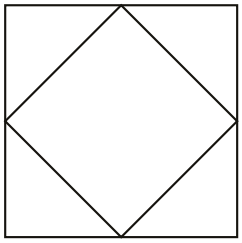


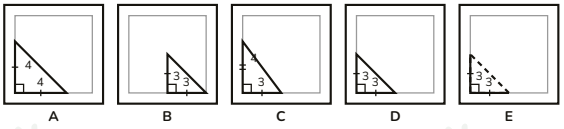
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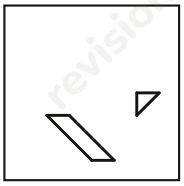


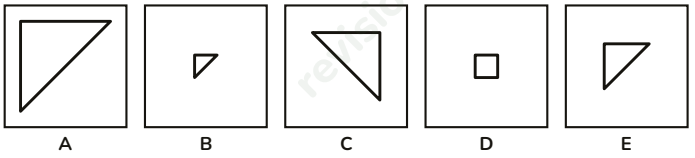
16 The figure below is made of straight lines only. Which one of the shapes A to E is hidden inside it - its exact outline can be traced using lines already drawn, with none added or altered?





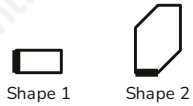
17 The figure below is made of straight lines only. Which one of the shapes A to E is hidden inside it, the same size and the same way up, with its whole outline traced along lines that are already drawn?

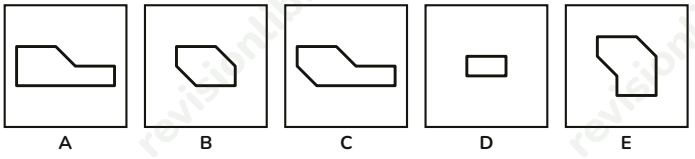




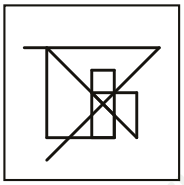
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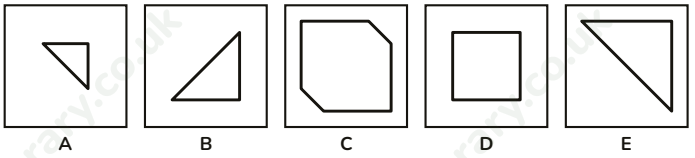
18 Shape 1 and Shape 2 are joined so that the thick edge of Shape 2 lies exactly along the thick edge of Shape 1. Shape 2 may be turned but not flipped over, and the shared edge disappears. Which option, A to E, shows the combined shape, with Shape 1 left where it is?



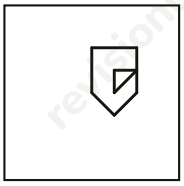


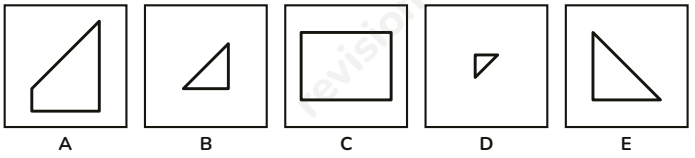
19 The figure below is made of straight lines only. Which one of the shapes A to E is hidden inside it, the same size and the same way up, with its whole outline traced along lines that are already drawn?



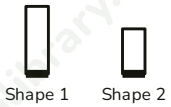


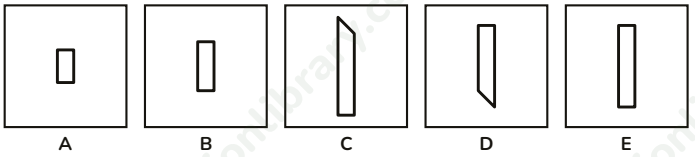
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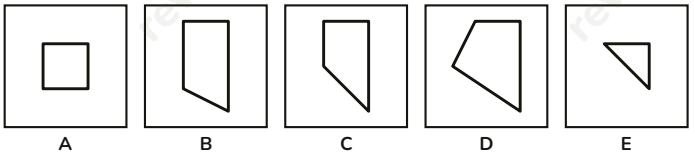
21 Shape 1 and Shape 2 are joined so that the thick edge of Shape 2 lies exactly along the thick edge of Shape 1. Shape 2 may be turned but not flipped over, and the shared edge disappears. Which option, A to E, shows the combined shape, with Shape 1 left where it is?



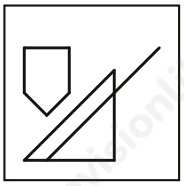


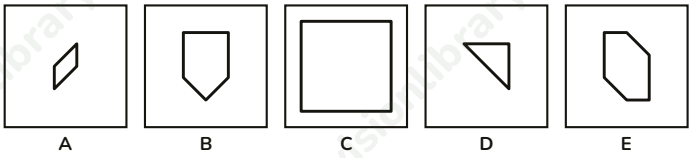
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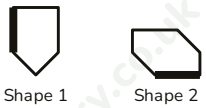


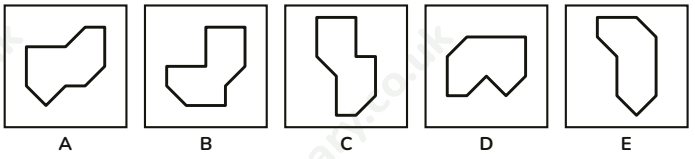
23 The figure below is made of straight lines only. Which one of the shapes A to E is hidden inside it, the same size and the same way up, with its whole outline traced along lines that are already drawn?





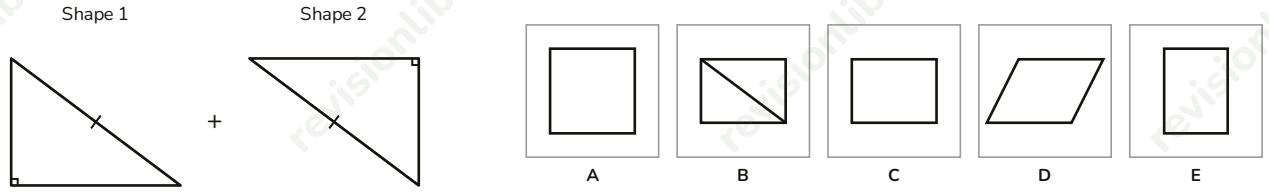
24 Shape 1 and Shape 2 are joined so that the thick edge of Shape 2 lies exactly along the thick edge of Shape 1. Shape 2 may be turned but not flipped over, and the shared edge disappears. Which option, A to E, shows the combined shape, with Shape 1 left where it is?



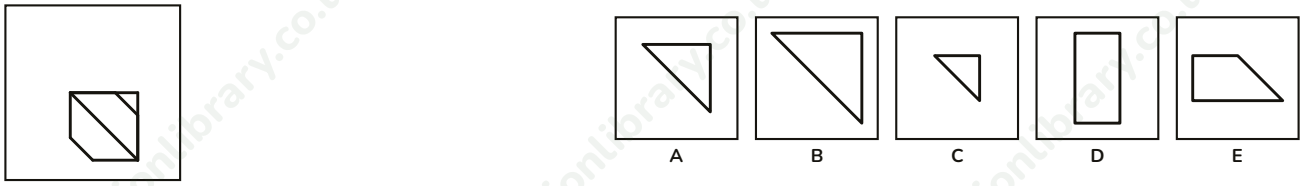


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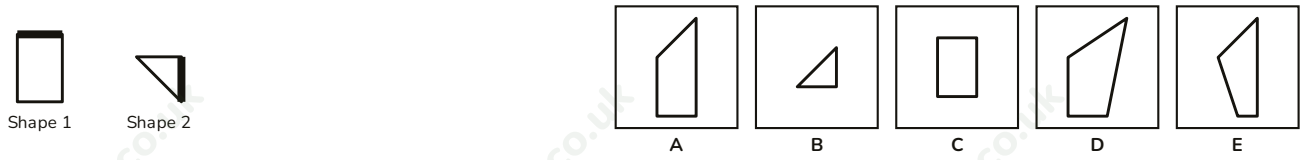
25 Shape 1 and Shape 2 below (two congruent right-angled triangles) are joined so that the marked edge (hypotenuse) of Shape 2 lies exactly along the marked edge (hypotenuse) of Shape 1, with Shape 2 rotated 180 degrees about the midpoint of that shared edge. The shared edge is erased. Which option, A to E, shows the resulting combined shape?



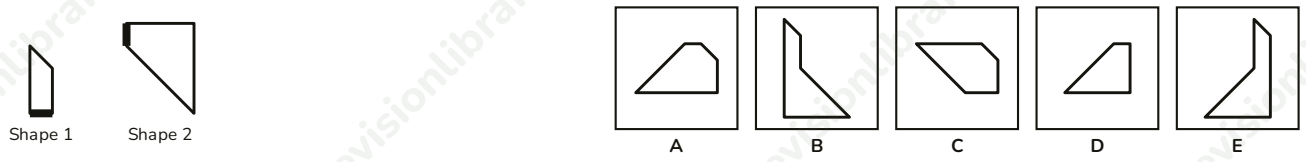
26 The figure below is made of straight lines only. Which one of the shapes A to E is hidden inside it, the same size and the same way up, with its whole outline traced along lines that are already drawn?



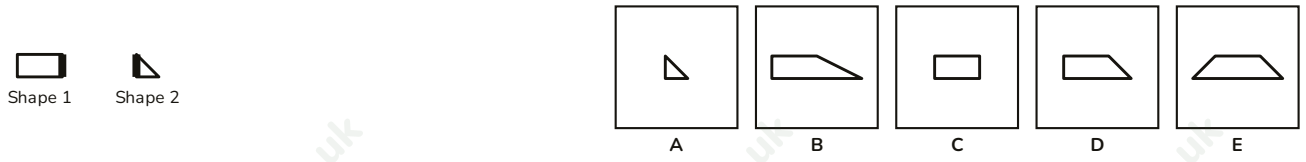
27 Shape 1 and Shape 2 are joined so that the thick edge of Shape 2 lies exactly along the thick edge of Shape 1. Shape 2 may be turned but not flipped over, and the shared edge disappears. Which option, A to E, shows the combined shape, with Shape 1 left where it is?



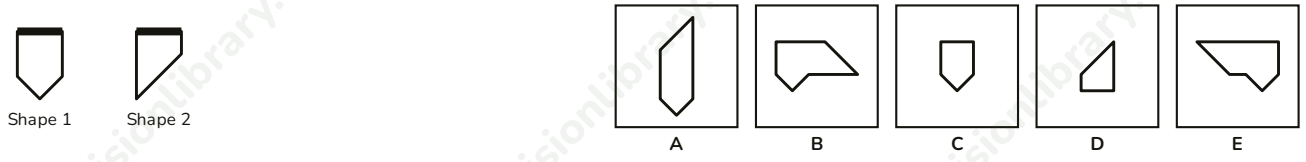
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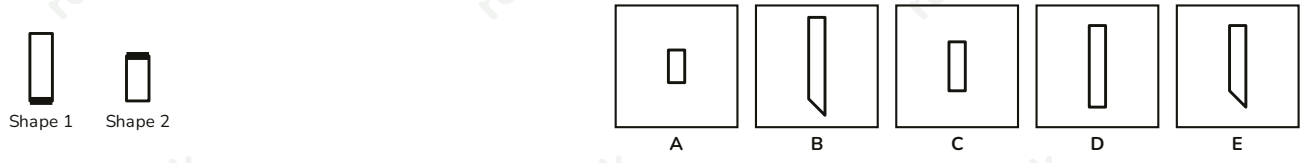
29



30



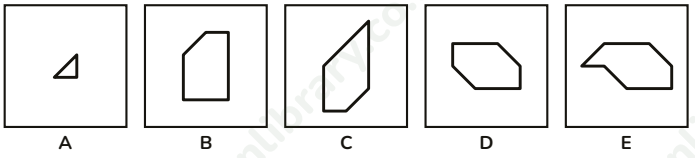
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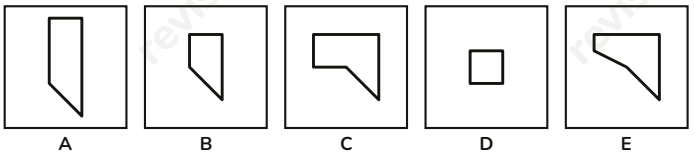
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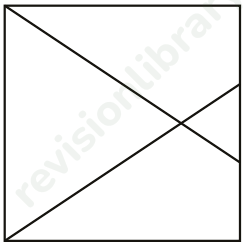


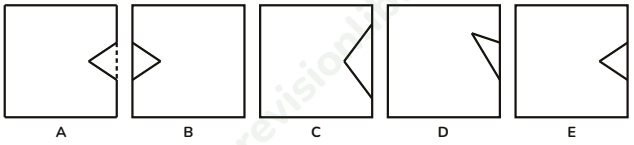
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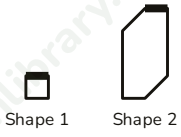


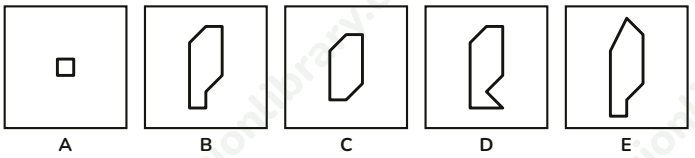
34 The figure below is made of straight lines only. Which one of the shapes A to E is hidden inside it - its exact outline can be traced using lines already drawn, with none added or altered?



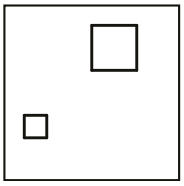


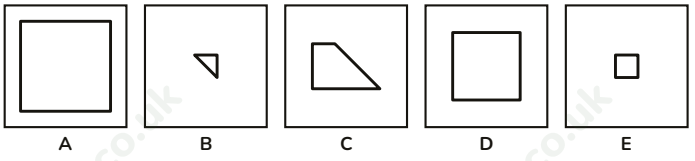
35 Shape 1 and Shape 2 are joined so that the thick edge of Shape 2 lies exactly along the thick edge of Shape 1. Shape 2 may be turned but not flipped over, and the shared edge disappears. Which option, A to E, shows the combined shape, with Shape 1 left where it is?



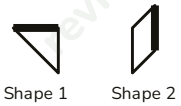


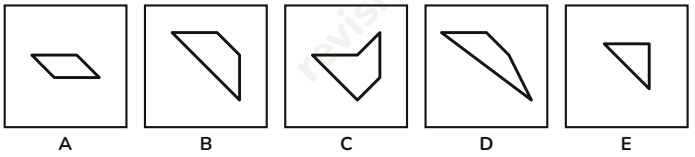
36 The figure below is made of straight lines only. Which one of the shapes A to E is hidden inside it, the same size and the same way up, with its whole outline traced along lines that are already drawn?





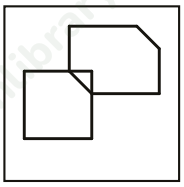
37 Shape 1 and Shape 2 are joined so that the thick edge of Shape 2 lies exactly along the thick edge of Shape 1. Shape 2 may be turned but not flipped over, and the shared edge disappears. Which option, A to E, shows the combined shape, with Shape 1 left where it is?

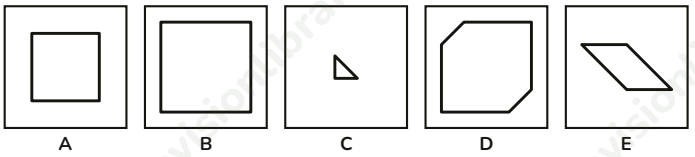




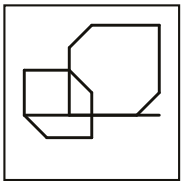
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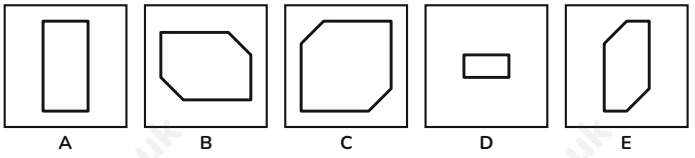
38 The figure below is made of straight lines only. Which one of the shapes A to E is hidden inside it, the same size and the same way up, with its whole outline traced along lines that are already drawn?





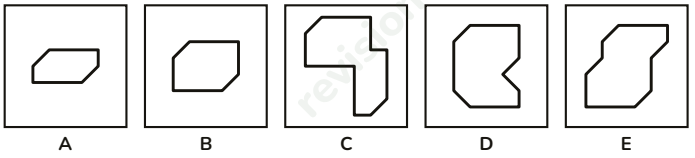
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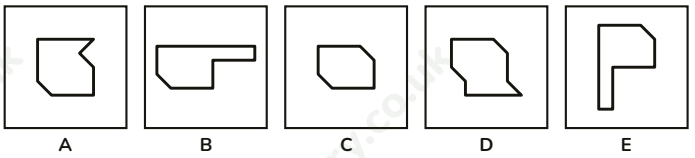
40 Shape 1 and Shape 2 are joined so that the thick edge of Shape 2 lies exactly along the thick edge of Shape 1. Shape 2 may be turned but not flipped over, and the shared edge disappears. Which option, A to E, shows the combined shape, with Shape 1 left where it is?





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Mark scheme · 4.19 Combined and Hidden Shapes: 1-hour Pack

Question 1

selects option B: the two pieces join along the thick edges and the shared edge is removed, leaving this outline (cao) **B1**

Answer: B) A six-sided shape with 6 corners at (2, 2), (1, 3), (0, 2), (0, 0), (3, 0), (3, 3), measured in grid units from its lower-left corner

Question 2

selects option A: every side of this shape lies along a line in the figure, and no other option can be traced (cao) **B1**

Answer: A) A four-sided shape with 4 corners at (0, 0), (3, 0), (3, 3), (0, 3), measured in grid units from its lower-left corner

Question 3

selects option D: every side of this shape lies along a line in the figure, and no other option can be traced (cao) **B1**

Answer: D) A triangle with 3 corners at (0, 1), (0, 0), (1, 1), measured in grid units from its lower-left corner

Question 4

selects option E: every side of this shape lies along a line in the figure, and no other option can be traced (cao) **B1**

Answer: E) A four-sided shape with 4 corners at (0, 4), (0, 0), (2, 0), (2, 4), measured in grid units from its lower-left corner

Question 5

selects option B: the two pieces join along the thick edges and the shared edge is removed, leaving this outline (cao) **B1**

Answer: B) A 9-sided shape with 9 corners at (1, 4), (0, 3), (0, 0), (2, 0), (3, 1), (4, 0), (5, 0), (5, 3), (4, 4), measured in grid units from its lower-left corner

Question 6

selects option A: every side of this shape lies along a line in the figure, and no other option can be traced (cao) **B1**

Answer: A) A six-sided shape with 6 corners at (2, 4), (0, 4), (0, 1), (1, 0), (3, 0), (3, 3), measured in grid units from its lower-left corner

Question 7

selects the pentagon with the roof centred on the top edge, apex at (3,5.5) (option C), cao **B1**

Answer: C

Question 8

selects option D: every side of this shape lies along a line in the figure, and no other option can be traced (cao) **B1**

Answer: D) A four-sided shape with 4 corners at (1, 3), (0, 3), (0, 0), (1, 0), measured in grid units from its lower-left corner

Question 9

selects option D: the two pieces join along the thick edges and the shared edge is removed, leaving this outline (cao) **B1**

Answer: D) A five-sided shape with 5 corners at (2, 4), (1, 4), (0, 3), (0, 2), (2, 0), measured in grid units from its lower-left corner

Question 10

selects option A: the two pieces join along the thick edges and the shared edge is removed, leaving this outline (cao) **B1**

Answer: A) A six-sided shape with 6 corners at (2, 2), (1, 2), (0, 1), (1, 1), (1, 0), (2, 1), measured in grid units from its lower-left corner

Question 11

selects option B: every side of this shape lies along a line in the figure, and no other option can be traced (cao) **B1**

Answer: B) A triangle with 3 corners at (2, 0), (2, 2), (0, 0), measured in grid units from its lower-left corner

Question 12

selects option C: the two pieces join along the thick edges and the shared edge is removed, leaving this outline (cao) **B1**

Answer: C) A five-sided shape with 5 corners at (0, 3), (0, 0), (4, 0), (1, 3), (1, 4), measured in grid units from its lower-left corner

Question 13

selects option D: every side of this shape lies along a line in the figure, and no other option can be traced (cao) **B1**

Answer: D) A triangle with 3 corners at (0, 0), (4, 0), (0, 4), measured in grid units from its lower-left corner

Question 14

selects option C: every side of this shape lies along a line in the figure, and no other option can be traced (cao) **B1**

Answer: C) A triangle with 3 corners at (3, 3), (0, 0), (3, 0), measured in grid units from its lower-left corner

Question 15

selects option B: every side of this shape lies along a line in the figure, and no other option can be traced (cao) **B1**

Answer: B) A five-sided shape with 5 corners at (2, 0), (3, 1), (2, 2), (0, 2), (0, 0), measured in grid units from its lower-left corner

Question 16

selects the corner triangle with legs 3 and 3 and its right angle at an outer corner (option D), cao **B1**

Answer: D

Question 17

selects option B: every side of this shape lies along a line in the figure, and no other option can be traced (cao) **B1**

Answer: B) A triangle with 3 corners at (0, 0), (1, 1), (0, 1), measured in grid units from its lower-left corner

Question 18

selects option C: the two pieces join along the thick edges and the shared edge is removed, leaving this outline (cao) **B1**

Answer: C) A seven-sided shape with 7 corners at (5, 0), (5, 1), (3, 1), (2, 2), (0, 2), (0, 1), (1, 0), measured in grid units from its lower-left corner

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Question 19

selects option A: every side of this shape lies along a line in the figure, and no other option can be traced (cao) **B1**

Answer: A) A triangle with 3 corners at (2, 2), (0, 2), (2, 0), measured in grid units from its lower-left corner

Question 20

selects option D: every side of this shape lies along a line in the figure, and no other option can be traced (cao) **B1**

Answer: D) A triangle with 3 corners at (0, 0), (1, 1), (0, 1), measured in grid units from its lower-left corner

Question 21

selects option E: the two pieces join along the thick edges and the shared edge is removed, leaving this outline (cao) **B1**

Answer: E) A four-sided shape with 4 corners at (1, 5), (0, 5), (0, 0), (1, 0), measured in grid units from its lower-left corner

Question 22

selects option C: the two pieces join along the thick edges and the shared edge is removed, leaving this outline (cao) **B1**

Answer: C) A four-sided shape with 4 corners at (2, 4), (0, 4), (0, 2), (2, 0), measured in grid units from its lower-left corner

Question 23

selects option B: every side of this shape lies along a line in the figure, and no other option can be traced (cao) **B1**

Answer: B) A five-sided shape with 5 corners at (2, 3), (0, 3), (0, 1), (1, 0), (2, 1), measured in grid units from its lower-left corner

Question 24

selects option D: the two pieces join along the thick edges and the shared edge is removed, leaving this outline (cao) **B1**

Answer: D) An eight-sided shape with 8 corners at (2, 1), (3, 0), (4, 1), (4, 3), (1, 3), (0, 2), (0, 0), (1, 0), measured in grid units from its lower-left corner

Question 25

selects the plain 4 by 3 rectangle with no internal diagonal line (option C), cao **B1**

Answer: C

Question 26

selects option A: every side of this shape lies along a line in the figure, and no other option can be traced (cao) **B1**

Answer: A) A triangle with 3 corners at (3, 3), (0, 3), (3, 0), measured in grid units from its lower-left corner

Question 27

selects option A: the two pieces join along the thick edges and the shared edge is removed, leaving this outline (cao) **B1**

Answer: A) A four-sided shape with 4 corners at (0, 3), (0, 0), (2, 0), (2, 5), measured in grid units from its lower-left corner

Question 28

selects option E: the two pieces join along the thick edges and the shared edge is removed, leaving this outline (cao) **B1**

Answer: E) A five-sided shape with 5 corners at (4, 5), (3, 6), (3, 3), (0, 0), (4, 0), measured in grid units from its lower-left corner

Question 29

selects option D: the two pieces join along the thick edges and the shared edge is removed, leaving this outline (cao) **B1**

Answer: D) A four-sided shape with 4 corners at (2, 1), (0, 1), (0, 0), (3, 0), measured in grid units from its lower-left corner

Question 30

selects option A: the two pieces join along the thick edges and the shared edge is removed, leaving this outline (cao) **B1**

Answer: A) A five-sided shape with 5 corners at (0, 1), (1, 0), (2, 1), (2, 6), (0, 4), measured in grid units from its lower-left corner

Question 31

selects option D: the two pieces join along the thick edges and the shared edge is removed, leaving this outline (cao) **B1**

Answer: D) A four-sided shape with 4 corners at (1, 5), (0, 5), (0, 0), (1, 0), measured in grid units from its lower-left corner

Question 32

selects option E: the two pieces join along the thick edges and the shared edge is removed, leaving this outline (cao) **B1**

Answer: E) A seven-sided shape with 7 corners at (1, 2), (0, 1), (1, 1), (2, 0), (4, 0), (4, 1), (3, 2), measured in grid units from its lower-left corner

Question 33

selects option C: the two pieces join along the thick edges and the shared edge is removed, leaving this outline (cao) **B1**

Answer: C) A five-sided shape with 5 corners at (0, 4), (0, 2), (2, 2), (4, 0), (4, 4), measured in grid units from its lower-left corner

Question 34

selects the isosceles triangle with apex left, 2-unit vertical base on the right edge, symmetric about mid-height (option E), cao **B1**

Answer: E

Question 35

selects option B: the two pieces join along the thick edges and the shared edge is removed, leaving this outline (cao) **B1**

Answer: B) A seven-sided shape with 7 corners at (0, 0), (1, 0), (1, 1), (2, 2), (2, 5), (1, 5), (0, 4), measured in grid units from its lower-left corner

Question 36

selects option E: every side of this shape lies along a line in the figure, and no other option can be traced (cao) **B1**

Answer: E) A four-sided shape with 4 corners at (1, 0), (1, 1), (0, 1), (0, 0), measured in grid units from its lower-left corner

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Question 37

selects option B: the two pieces join along the thick edges and the shared edge is removed, leaving this outline (cao) **B1**

Answer: B) A four-sided shape with 4 corners at (3, 0), (3, 2), (2, 3), (0, 3), measured in grid units from its lower-left corner

Question 38

selects option A: every side of this shape lies along a line in the figure, and no other option can be traced (cao) **B1**

Answer: A) A four-sided shape with 4 corners at (0, 0), (3, 0), (3, 3), (0, 3), measured in grid units from its lower-left corner

Question 39

selects option C: every side of this shape lies along a line in the figure, and no other option can be traced (cao) **B1**

Answer: C) A six-sided shape with 6 corners at (0, 3), (0, 0), (3, 0), (4, 1), (4, 4), (1, 4), measured in grid units from its lower-left corner

Question 40

selects option E: the two pieces join along the thick edges and the shared edge is removed, leaving this outline (cao) **B1**

Answer: E) A 10-sided shape with 10 corners at (1, 3), (0, 2), (0, 0), (3, 0), (4, 1), (4, 3), (5, 4), (5, 5), (2, 5), (1, 4), measured in grid units from its lower-left corner

Question 41

selects option B: the two pieces join along the thick edges and the shared edge is removed, leaving this outline (cao) **B1**

Answer: B) A seven-sided shape with 7 corners at (0, 3), (0, 1), (1, 0), (4, 0), (4, 2), (7, 2), (7, 3), measured in grid units from its lower-left corner

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