4.19 Combined and Hidden Shapes: 30-minute Pack

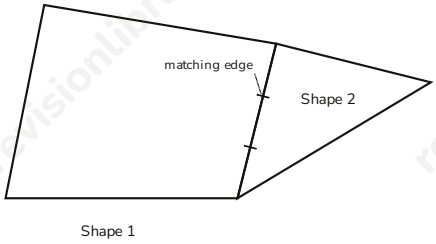
Total Marks

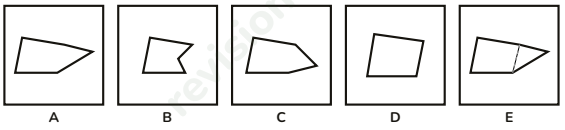
GL ASSESSMENT EP.N13 · Calculators not allowed · about 30 minutes

Name: _____ Date: ____ / ____ / _____

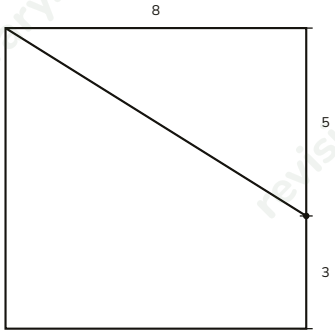
Answer ALL questions. Show all your working.

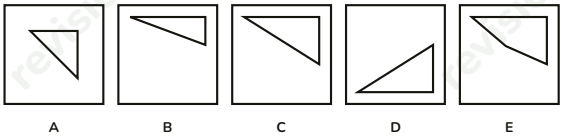
1 Shape 1 (an irregular quadrilateral) and Shape 2 (a triangle) below are joined so that the marked edge of Shape 2 lies exactly along the marked edge of Shape 1 (the shared edge is erased). Which option, A to E, shows the resulting combined shape?





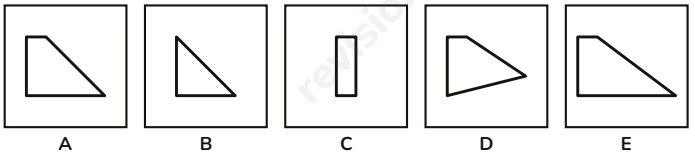
2 The figure below is made of straight lines only. Which one of the shapes A to E is hidden inside it - its exact outline can be traced using lines already drawn, with none added or altered?





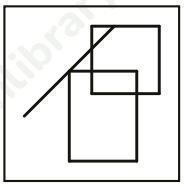
3 Shape 1 and Shape 2 are joined so that the thick edge of Shape 2 lies exactly along the thick edge of Shape 1. Shape 2 may be turned but not flipped over, and the shared edge disappears. Which option, A to E, shows the combined shape, with Shape 1 left where it is?

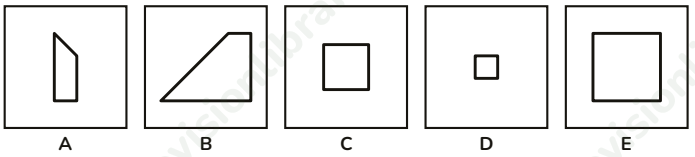




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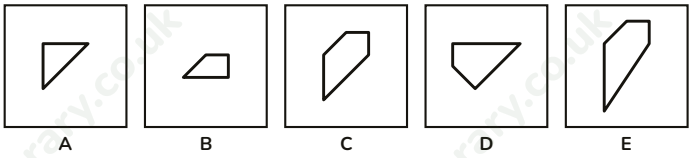
4 The figure below is made of straight lines only. Which one of the shapes A to E is hidden inside it, the same size and the same way up, with its whole outline traced along lines that are already drawn?



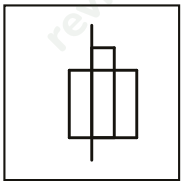


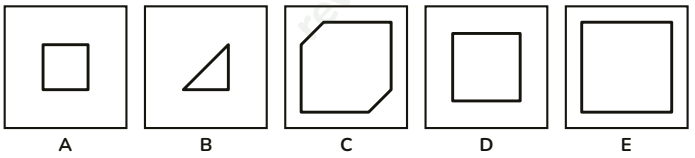
5 Shape 1 and Shape 2 are joined so that the thick edge of Shape 2 lies exactly along the thick edge of Shape 1. Shape 2 may be turned but not flipped over, and the shared edge disappears. Which option, A to E, shows the combined shape, with Shape 1 left where it is?



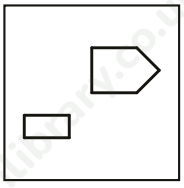


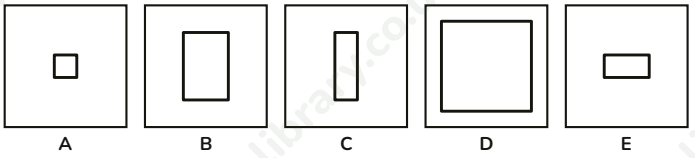
6 The figure below is made of straight lines only. Which one of the shapes A to E is hidden inside it, the same size and the same way up, with its whole outline traced along lines that are already drawn?



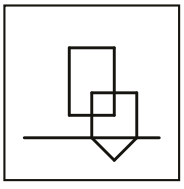


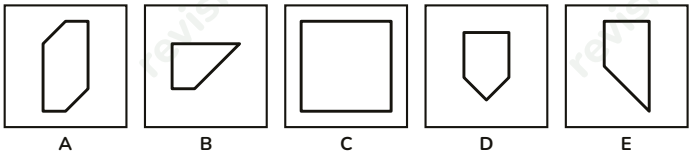
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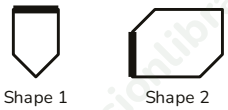


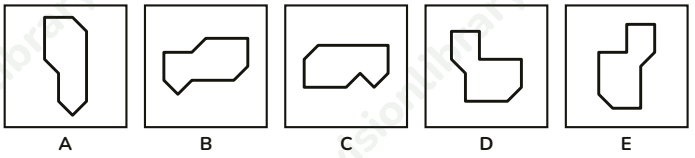
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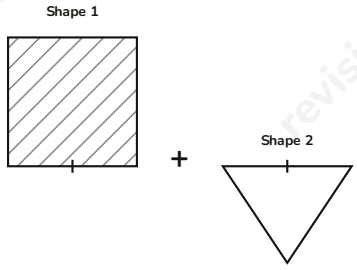
9 Shape 1 and Shape 2 are joined so that the thick edge of Shape 2 lies exactly along the thick edge of Shape 1. Shape 2 may be turned but not flipped over, and the shared edge disappears. Which option, A to E, shows the combined shape, with Shape 1 left where it is?

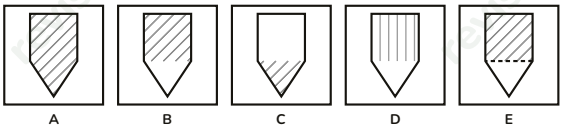




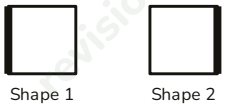
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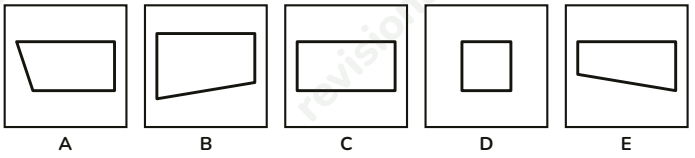
10 Shape 1 (shaded with 45 degree grey hatching) and Shape 2 (left plain white) below are joined so that the marked edge of Shape 2 lies exactly along the marked edge of Shape 1 (the shared edge is erased, and each shape keeps its own shading). Which option, A to E, shows the resulting combined shape?





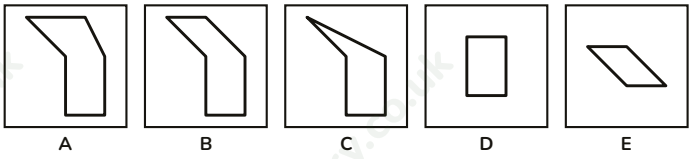
11 Shape 1 and Shape 2 are joined so that the thick edge of Shape 2 lies exactly along the thick edge of Shape 1. Shape 2 may be turned but not flipped over, and the shared edge disappears. Which option, A to E, shows the combined shape, with Shape 1 left where it is?





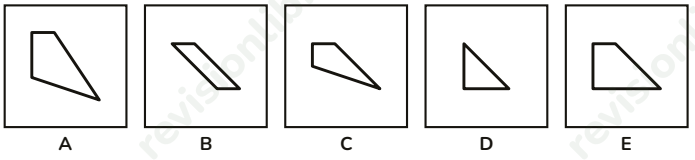
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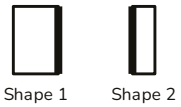


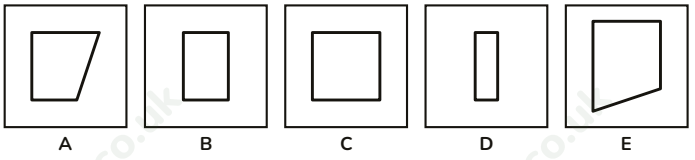
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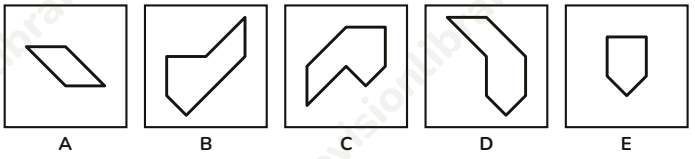
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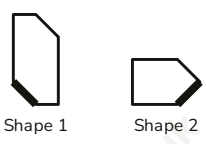


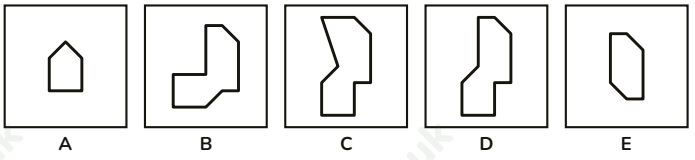
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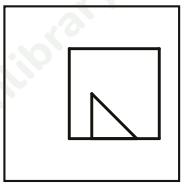
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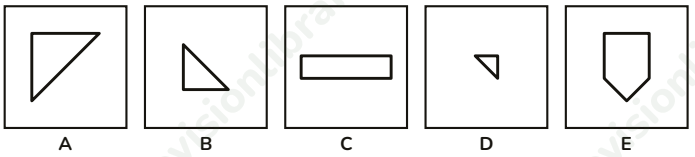




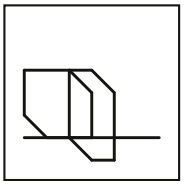
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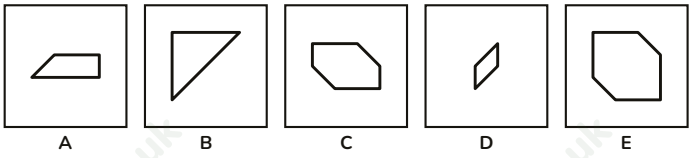
17 The figure below is made of straight lines only. Which one of the shapes A to E is hidden inside it, the same size and the same way up, with its whole outline traced along lines that are already drawn?



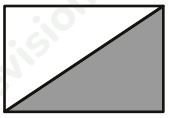


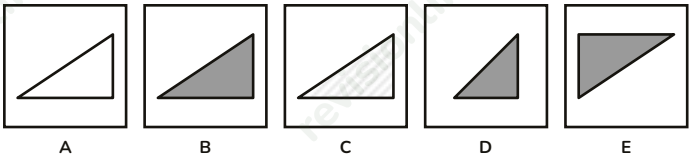
18





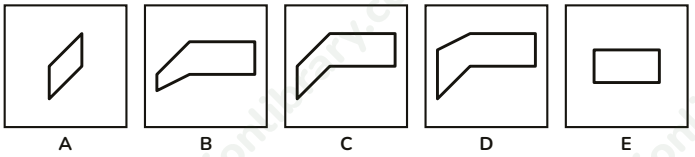
19 The figure below is made of straight lines only, with one region shaded grey. Which one of the shapes A to E matches both the exact shape AND the exact shading of the shaded region hidden inside it?



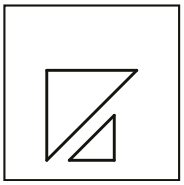


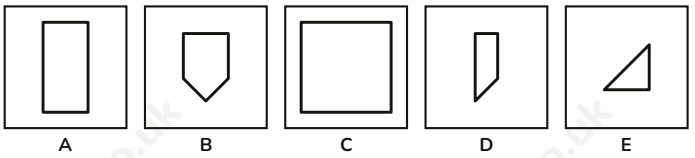
20 Shape 1 and Shape 2 are joined so that the thick edge of Shape 2 lies exactly along the thick edge of Shape 1. Shape 2 may be turned but not flipped over, and the shared edge disappears. Which option, A to E, shows the combined shape, with Shape 1 left where it is?





21 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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Mark scheme · 4.19 Combined and Hidden Shapes: 30-minute Pack

Question 1

selects the pentagon with the correct outward bump vertex at (11,3) and no internal line (option A), cao **B1**

Answer: A

Question 2

selects the right-angled triangle with legs 8 and 5, right angle at the top-right corner (option C), cao **B1**

Answer: C

Question 3

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 (1, 3), (0, 3), (0, 0), (4, 0), 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, 0), (3, 0), (3, 3), (0, 3), measured in grid units from its lower-left corner

Question 5

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, 2), (0, 0), (2, 2), (2, 3), (1, 3), measured in grid units from its lower-left corner

Question 6

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 (3, 3), (0, 3), (0, 0), (3, 0), measured in grid units from its lower-left corner

Question 7

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 (2, 1), (0, 1), (0, 0), (2, 0), measured in grid units from its lower-left corner

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 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 9

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

Answer: A) An eight-sided shape with 8 corners at (1, 3), (1, 1), (2, 0), (3, 1), (3, 6), (2, 7), (0, 7), (0, 4), measured in grid units from its lower-left corner

Question 10

selects the pentagon with only the original square region hatched at 45 degrees, no line at the join (option B), cao **B1**

Answer: B

Question 11

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 (6, 0), (6, 3), (0, 3), (0, 0), measured in grid units from its lower-left corner

Question 12

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 (4, 3), (2, 5), (0, 5), (2, 3), (2, 0), (4, 0), measured in grid units from its lower-left corner

Question 13

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 (3, 0), (1, 2), (0, 2), (0, 0), measured in grid units from its lower-left corner

Question 14

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 (0, 3), (0, 0), (3, 0), (3, 3), measured in grid units from its lower-left corner

Question 15

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 seven-sided shape with 7 corners at (2, 3), (2, 1), (3, 0), (4, 1), (4, 3), (2, 5), (0, 5), measured in grid units from its lower-left corner

Question 16

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 9-sided shape with 9 corners at (2, 2), (3, 2), (3, 5), (2, 6), (1, 6), (1, 3), (0, 2), (0, 0), (2, 0), measured in grid units from its lower-left corner

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 (2, 0), (0, 2), (0, 0), measured in grid units from its lower-left corner

Question 18

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

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Question 19

selects the triangle with legs 6 and 4, right angle bottom-right, solid grey fill (option B), cao **B1**

Answer: B

Question 20

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

Question 21

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

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