4.9 Plans and Elevations: 10-minute Pack

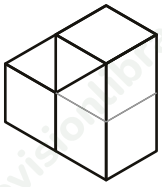
GL ASSESSMENT GL-EP.N11 · Calculators not allowed · about 10 minutes

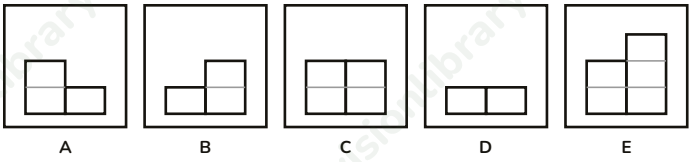
Total Marks

Name: _____ Date: ____ / ____ / _____

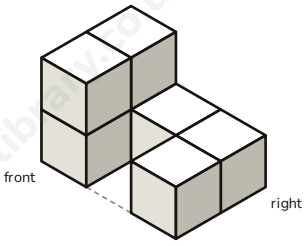
Answer ALL questions. Show all your working.

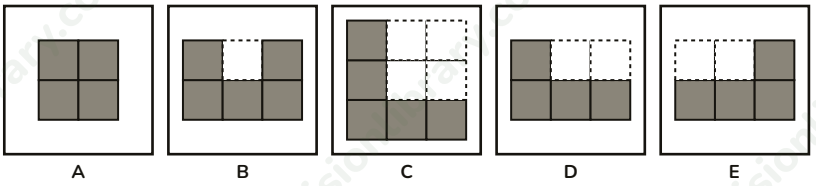
1 Look at the solid built from unit cubes. Which option shows its front elevation (the view looking straight at the front of the solid)?



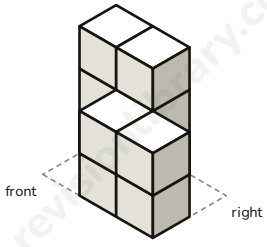


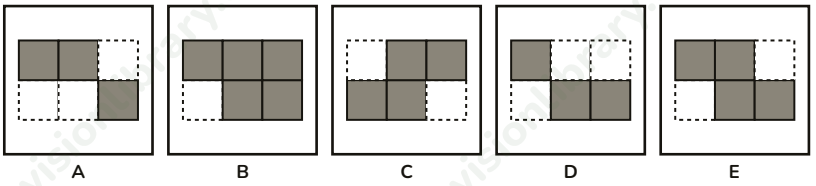
2 Rule: every cube sits on the table or on another cube (nothing floats), every stack of cubes can be seen from above in the picture (no stack is hidden behind another), and a cube you cannot see is always one that is needed to hold up the cubes you can. Look at the solid built from unit cubes. Which option, A to E, shows its front elevation (the view looking straight at the front of the solid)? Grey squares are cubes seen in that view; white squares are gaps.



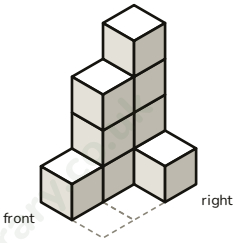


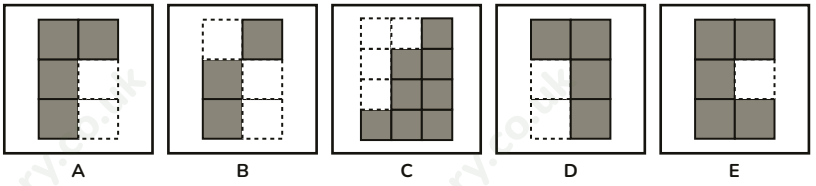
3 Rule: every cube sits on the table or on another cube (nothing floats), every stack of cubes can be seen from above in the picture (no stack is hidden behind another), and a cube you cannot see is always one that is needed to hold up the cubes you can. Look at the solid built from unit cubes. Which option, A to E, shows its plan (the view looking straight down from above, with the front of the solid at the bottom of the picture)? Grey squares are cubes seen in that view; white squares are gaps.





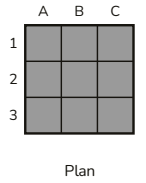
4



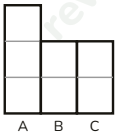


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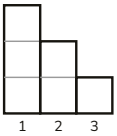
5 The plan, front elevation and side elevation of a solid built from unit cubes are shown below (all on the same 3 by 3 base grid, columns A, B, C and rows 1, 2, 3). Plan: all 9 grid squares shaded, no blank square. Front elevation: 3 adjoining bars left to right, heights 3, 2, 2. Side elevation: 3 adjoining bars left to right (row 1, row 2, row 3), heights 3, 2, 1. Which of the following solids (given as a full set of 9 stack heights) could produce all three of these views?



Plan



Front elevation



Side elevation

3	1	2
1	2	1
1	1	1

A

3	1	2
1	2	1
1	1	0

B

2	1	2
1	2	1
1	1	1

C

3	1	2
1	2	1
2	1	1

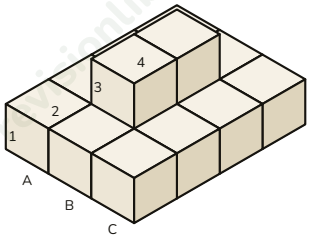
D

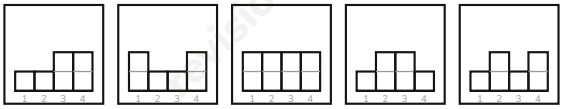
1	1	3
1	2	1
1	1	1

E

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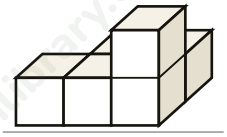
6 Look at the solid built from unit cubes. Which option shows its side elevation (the view looking straight at the right-hand side of the solid)?

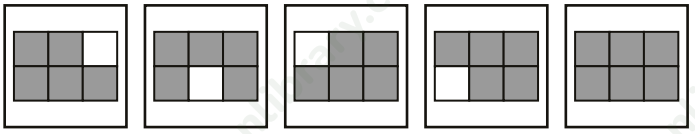




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7 Look at the solid built from unit cubes. Which option shows its plan (the view looking straight down from above)?





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Mark scheme · 4.9 Plans and Elevations: 10-minute Pack

Question 1

Correct option identified (bars 1, 2 oe) - the tallest stack in column A is 1 (Row 1 = 1, Row 2 = 1) and the tallest stack in column B is 2 (Row 1 = 2, Row 2 = 1) **B1**

Answer: B

Question 2

Correct option identified (front): Grid 3 columns by 2 rows (bottom row first). Shaded: A1, B1, C1, A2. Blank: B2, C2. Option B is wrong: it is a one square wrong. Option C is wrong: it is a one square wrong. Option A is wrong: it is a other view. Option E is wrong: it is a mirrored. **B1**

Answer: D) Grid 3 columns by 2 rows (bottom row first). Shaded: A1, B1, C1, A2. Blank: B2, C2.

Question 3

Correct option identified (plan): Grid 3 columns by 2 rows (bottom row first). Shaded: B1, C1, A2, B2. Blank: A1, C2. Option B is wrong: it is a one square wrong. Option A is wrong: it is a one square wrong. Option C is wrong: it is a mirrored. Option D is wrong: it is a one square wrong. **B1**

Answer: E) Grid 3 columns by 2 rows (bottom row first). Shaded: B1, C1, A2, B2. Blank: A1, C2.

Question 4

Correct option identified (plan): Grid 2 columns by 3 rows (bottom row first). Shaded: A1, A2, A3, B3. Blank: B1, B2. Option B is wrong: it is a one square wrong. Option E is wrong: it is a one square wrong. Option D is wrong: it is a mirrored. Option C is wrong: it is a other view. **B1**

Answer: A) Grid 2 columns by 3 rows (bottom row first). Shaded: A1, A2, A3, B3. Blank: B1, B2.

Question 5

Correct option identified - only option A produces a fully shaded plan, front elevation 3, 2, 2 and side elevation 3, 2, 1 simultaneously; every other option contradicts at least one of the three given views **B1**

Answer: A

Question 6

Correct option identified (bars 1, 2, 2, 1 oe) - the tallest stack in each of the 4 rows, reading row 1 to row 4, is 1, 2, 2 and 1 **B1**

Answer: D

Question 7

Correct option identified - every grid square with a stack height of at least 1 is shaded, and the one bare square (A2, height 0) is left blank **B1**

Answer: C

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