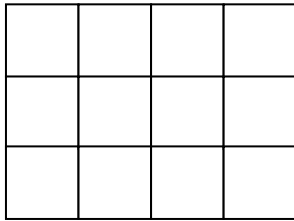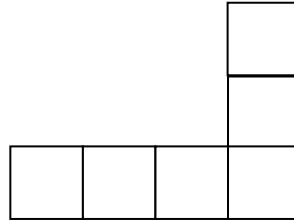# Topic Test
2D representations of 3D shapes (Higher)

You will need compasses, protractor and a ruler to answer some of the questions.
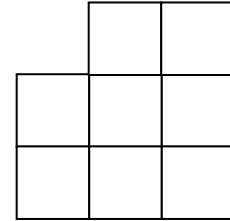
1   Here is the plan view, front elevation and side elevation of a shape made from centimetre-cubes.

Plan view   Front elevation   Side elevation
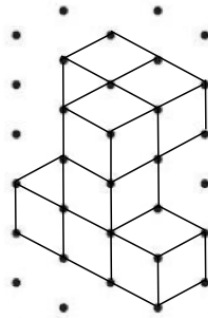
Circle the volume of the shape.

[1 mark]

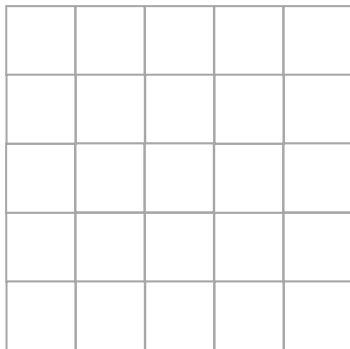12 cm^3 17 cm^3 19 cm^3 36 cm^3

2 Here is a shape, made from seven centimetre cubes drawn on a centimetre isometric grid.
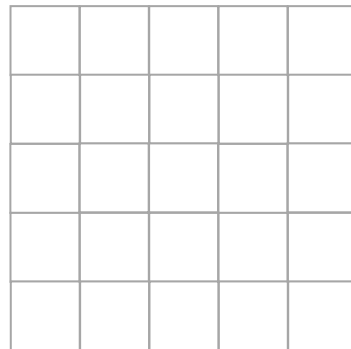

2 (a) On the grids below draw the plan, front elevation and side elevation of the shape.
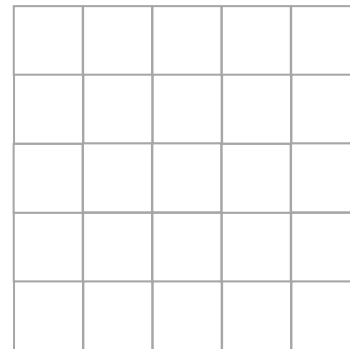
[3 marks]

Plan view   Front elevation   Side elevation

2(b) Circle the surface area of the shape.

[1 mark]

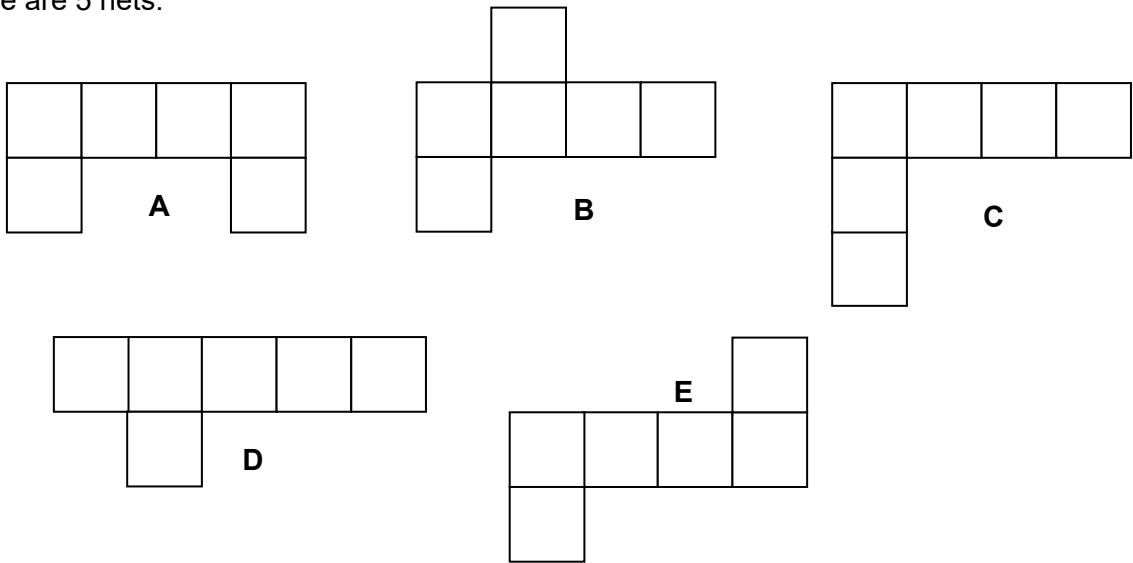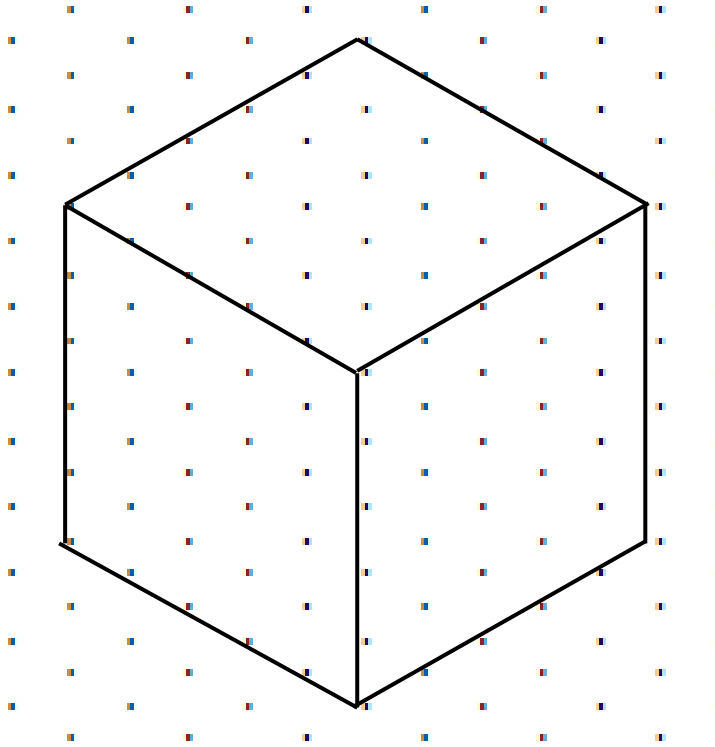7 cm²   28 cm²   30 cm²   42 cm²

3 Here are 5 nets.

Circle the letters that show the nets of a cube.

[2 marks]

A   B   C   D   E

4   A solid 5 cm cube is made using centimetre-cubes.

4 (a)   How many centimetre cubes are used to make the 5 cm cube?

[1 mark]

Answer _____

4 (b)   Work out the surface area of the 5 cm cube.

[1 mark]

Answer _____ cm^2

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The **outside** of the 5 cm cube is painted black.

4 (c) How many of the small cubes will have **three** sides painted?
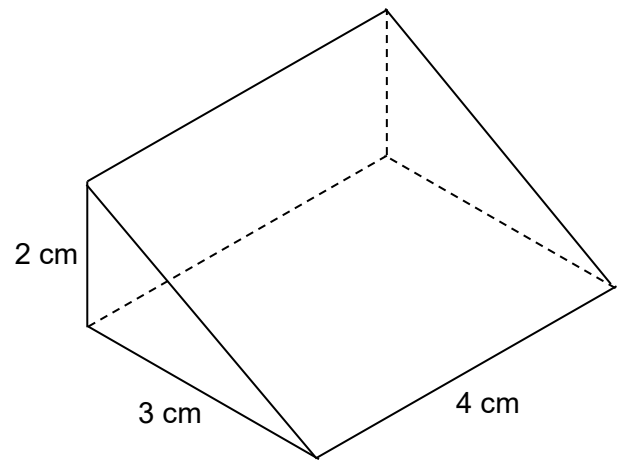
[1 mark]

Answer _____

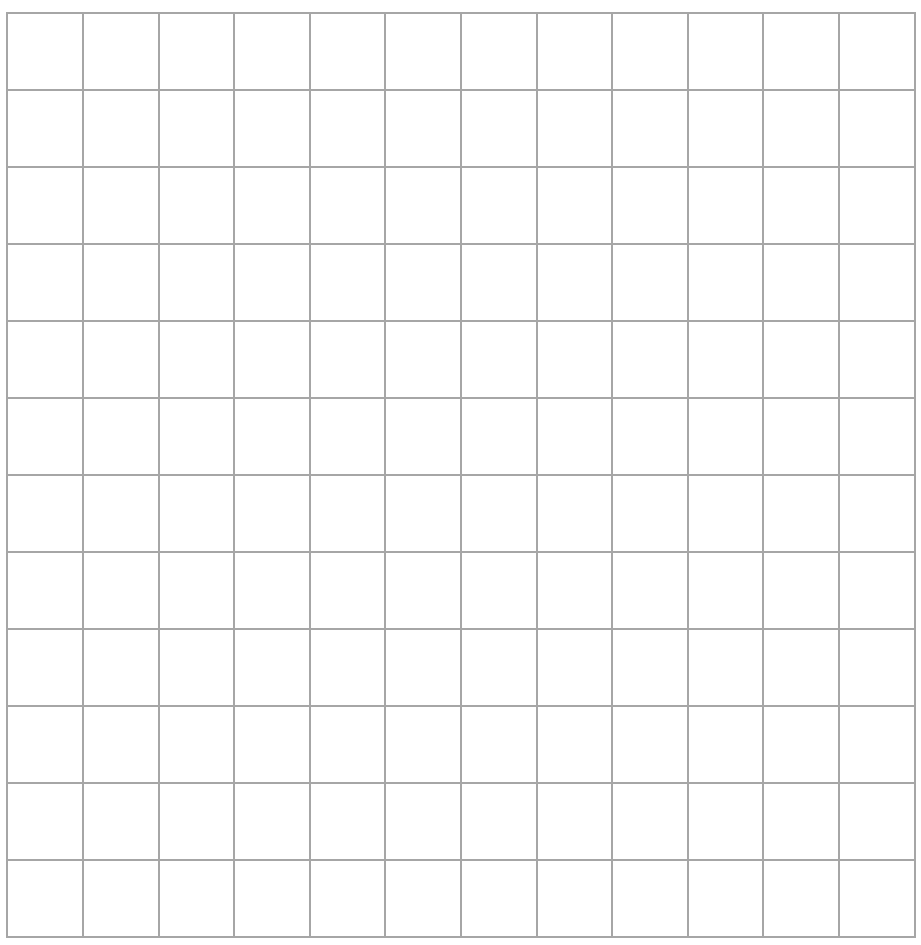**4 (d)** How many of the small cubes will have only **one** side painted?

[2 marks]

Answer _____

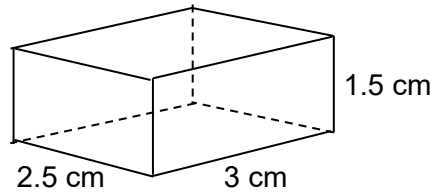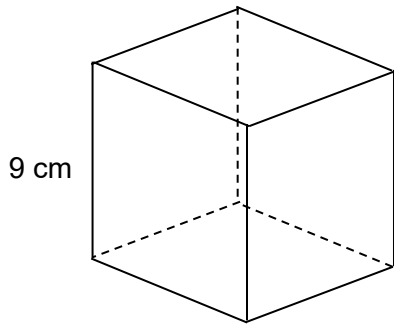**5**   The cross section of this prism is a right-angled triangle.

2 cm

3 cm

4 cm

On the centimetre grid draw an accurate net of the prism.

[3 marks]

6 The diagrams show a cube and a cuboid.

9 cm

1.5 cm

2.5 cm   3 cm

6 (a) Max says,

"The volume of the cube is 729 cm^3 and the volume of the cuboid is 11.25 cm^3

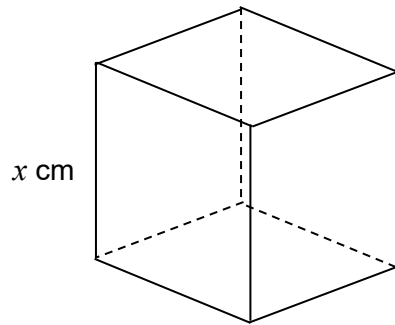729 ÷ 11.25 = 64.8 so 64 cuboids will fit in the cube."

Explain why Max is wrong.

[1 mark]

6 (b) Work out how many cuboids can fit inside the cube.

[2 marks]

Answer _____

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7 Here is a cube of side x cm

x cm

The **numerical** value of the surface area and the volume are the same.

Work out the value of x.

[2 marks]

Answer _____