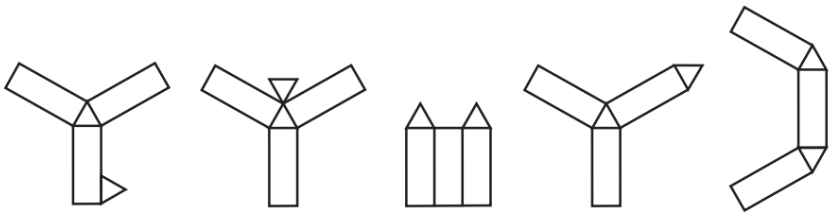
Topic 13 - 3D Shapes

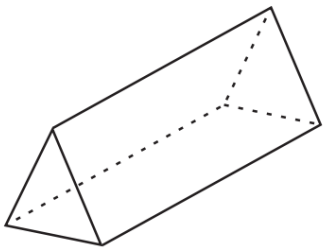
1	What is the sum of the number of faces, the number of edges and the number of vertices of a pyramid with a hexagonal base? **A** 18 **B** 20 **C** 24 **D** 26 **E** 38

2

Here are 5 different nets:



Which of the nets can be folded to make the triangular prism shown?



A net 1 only

B net 4 only

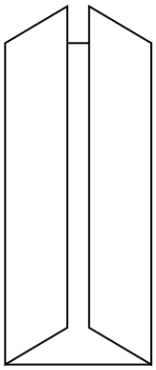
C nets 2 and 4 only

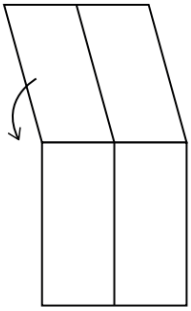
D nets 3 and 5 only

E nets 4 and 5 only

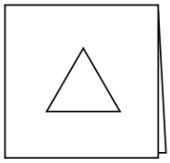
3

A square piece of paper is folded so that both edges meet in the middle, and then folded in half again, as shown below.



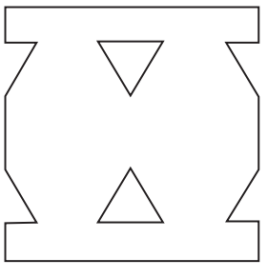


A triangle is then cut right through the centre of the folded paper.

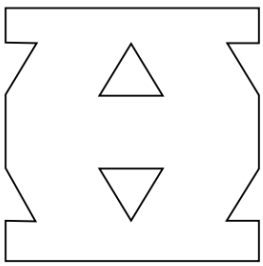


Which of the following diagrams shows the paper when it is unfolded?

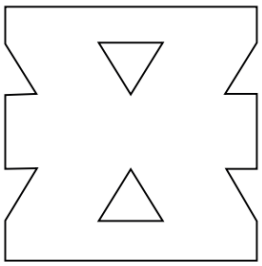
A



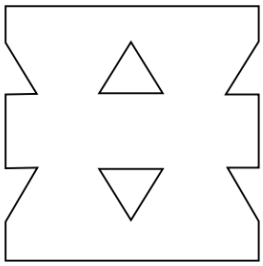
B



C



D

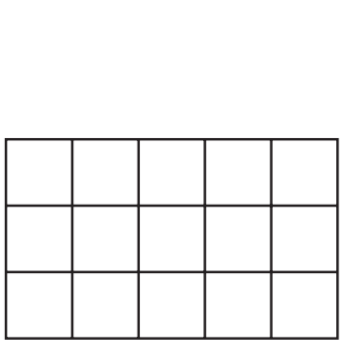


4

A rectangular prism is made from identical small cubes.

Each small cube is solid and looks like this from the side:

The three diagrams below show three different faces of the rectangular prism.



How many small cubes is the rectangular prism made from?

A 20

B 30

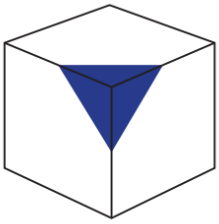
C 31

D 62

E 900

5

A cube has been painted around one vertex as shown.



Which of the following diagrams could be a net for this cube?

diagram 1

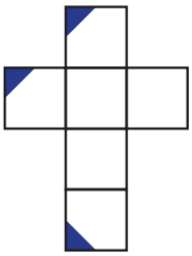


diagram 2

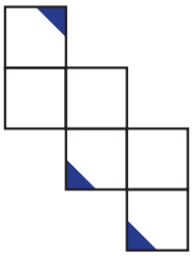
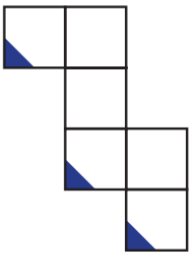


diagram 3



A diagram 1 only

B diagram 2 only

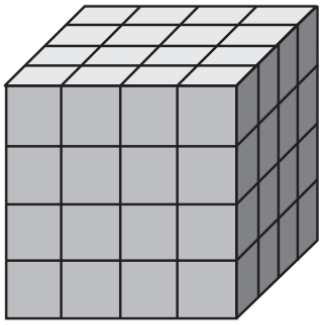
C diagram 3 only

D diagrams 1 and 2 only

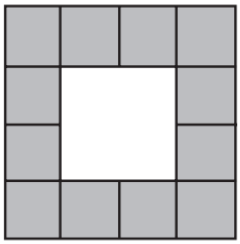
E diagrams 1 and 3 only

6

Harry has a large, **solid** cube made from 64 small cubes:



He removes some small cubes. He now sees this view when he looks at **any** of the six faces:



How many small cubes are in the object now?

A 16

B 32

C 36

D 40

E 72

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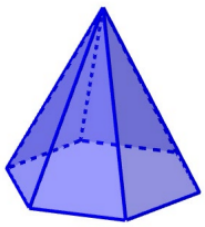
Answer Key

1	A pyramid with a hexagonal base has 1 hexagonal face and six triangular faces, so 7 faces altogether. The hexagonal base has six vertices, and there is one vertex at the top, so there are 7 vertices altogether. The hexagonal base has six edges, and then there are six edges joining the vertices at the base to the vertex at the top, so there are 12 edges altogether. So the sum of the number of faces, edges and vertices is 7 + 7 + 12 = 26. So the correct answer is **D 26**. 
2	B
3	A
4	B
5	A
6	B