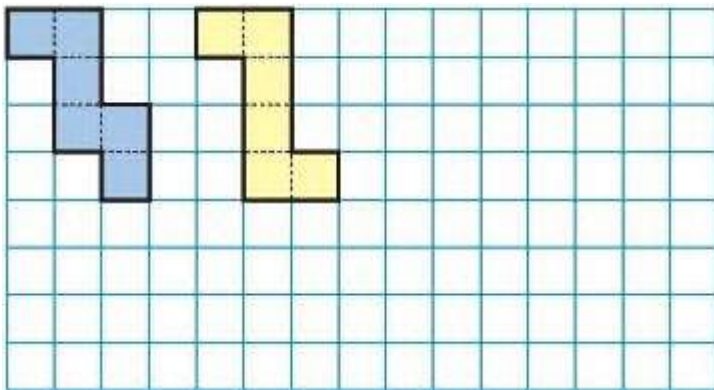


CHAPTER – 9

BOXES AND SKETCHES

Page No 127:

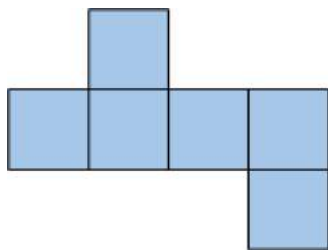
Question 1: Buddha wants to make a paper cube using a squared sheet. He knows that all the faces of a cube are squares. He draws two different shapes.



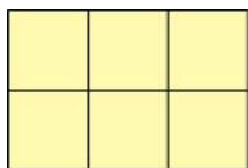
- Will both these shapes fold into a cube?
- Draw at least one more shape which can fold into a cube.
- What will be the area of each face of the cube?
- Draw one shape which will not fold into a cube.
- Look around and discuss which things around you look like a cube. List a few.

Answer:

- Yes, both the shapes will fold into a cube.
- The shape which can fold into a cube is shown below.



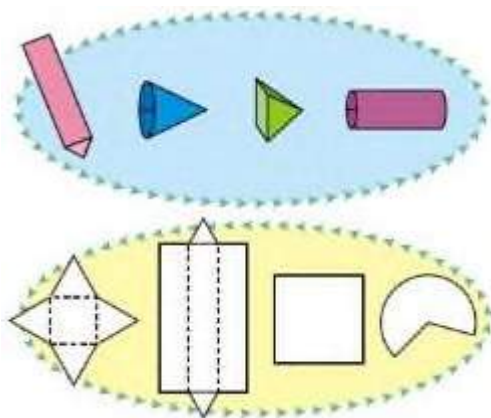
- We know that, each face of the cube is a small square. Area of small square is 1 square cm. Thus, the area of each face of the cube is 1 square cm.
- The shape which cannot fold into a cube is shown below.



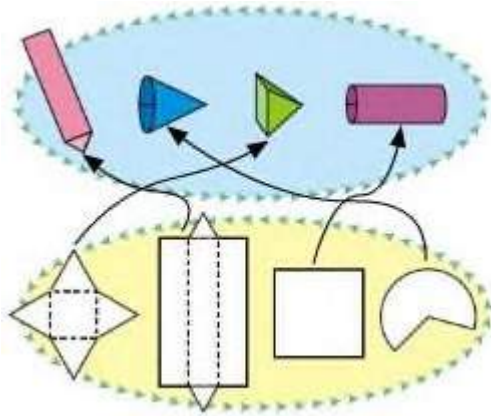
- The shape of die, sugar cubes, ice cubes, etc. resembles that of a cube.

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Question 1: All boxes are not cubes. Here are some different kinds of boxes. Match each shape below with a box into which it will fold.

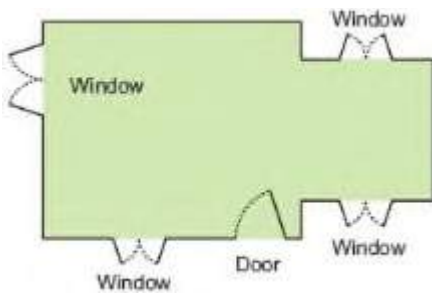


Answer:



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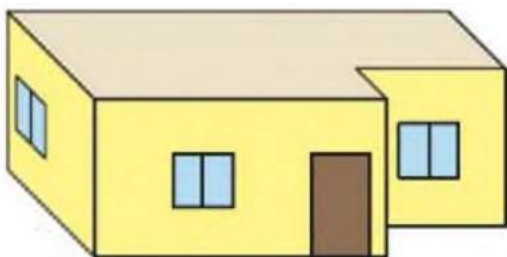
Question 1:



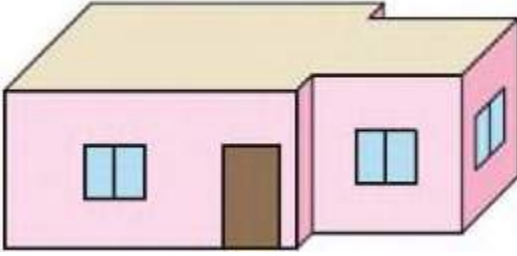
For making a house a floor map is first made. Have you ever seen a floor map? Here is a floor map of Vibha's house. It shows where the windows and the doors are in the house.

- Which is the front side of her house? How many windows are there on the front side?

(a)



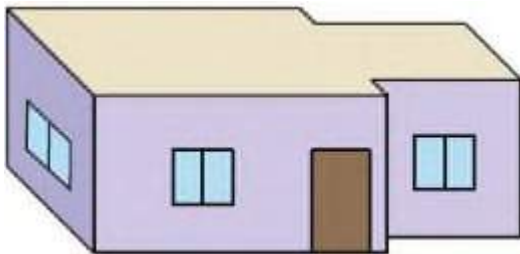
(b)



(c)



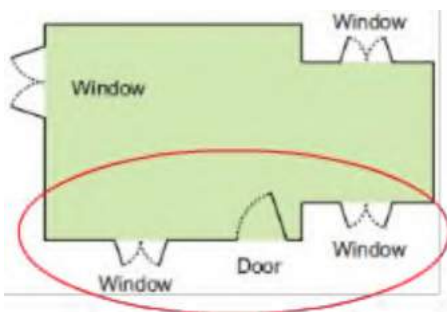
(d)



Here are four **deep drawings** of houses.

- Which one is Vibha's house?
- Why do the other three deep drawings not match the floor map? Discuss.

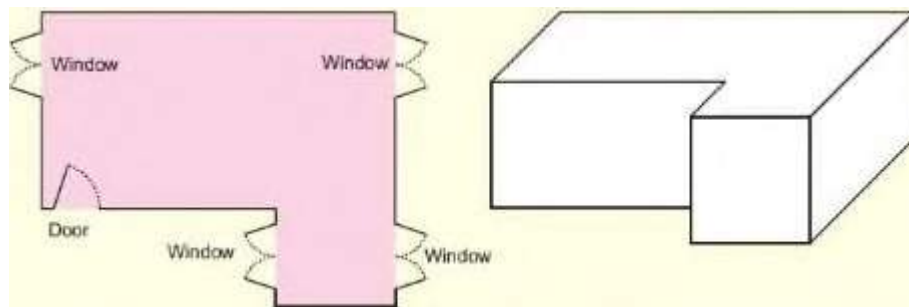
Answer:



- Front side of Vibha's house is encircled in the above image. There are two windows and one door on the front side of the house.
- The front side of Vibha's house has one door and two windows.
- The figure (c) represents Vibha's house.

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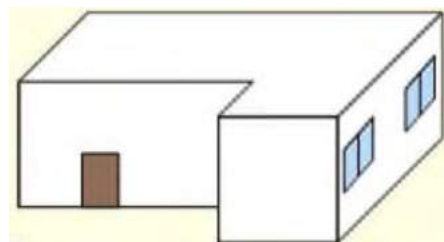
Question 1: Look at this floor map of a house. Make doors and windows on the deep drawing of this house.



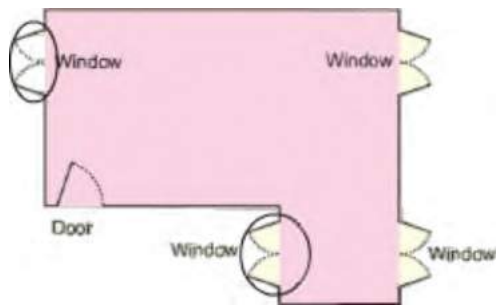
- Are there any windows you couldn't show on the deep drawing? Circle them on the floor map.

Answer:

The doors and windows on the deep drawing of the house is shown below.

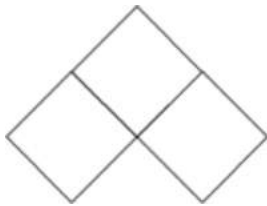


There are 2 windows that could not be shown on the deep drawing. These windows are encircled on the floor map as shown below.

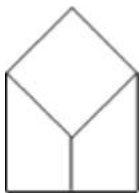


Question 2: Soumitro and his friends made deep drawings of a cube. These are their drawings.

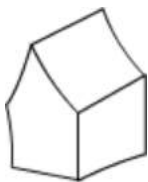
(a)



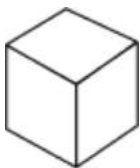
(b)



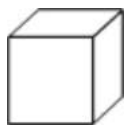
(c)



(d)



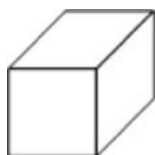
(e)



(f)



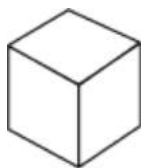
(g)



- Which of the drawings look correct to you? Discuss.
- Can you add some lines to make drawing (f) into a deep drawing of the cube?

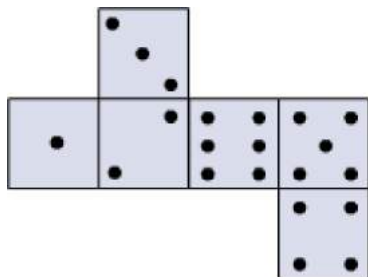
Answer:

- The drawings (d), (e) and (g) are correct.
- The deep drawing of a cube after adding lines to figure (f) is shown below:



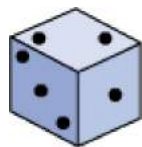
Page No 131:

Question 1: This cut-out is folded to make a cube.

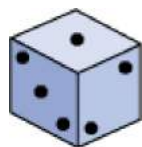


Which of these are the correct deep drawings of that cube?

(a)



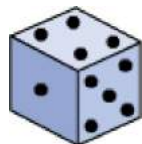
(b)



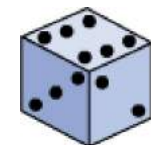
(c)



(d)

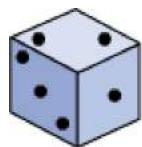


(e)



Answer:

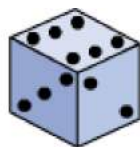
The correct deep drawings of the given cube are:



(a)

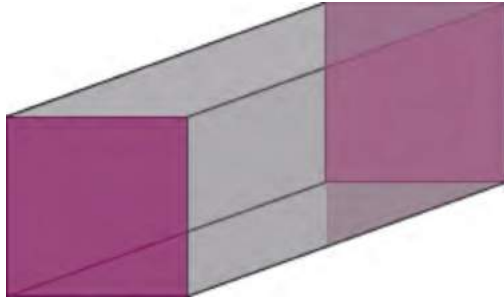


(d)



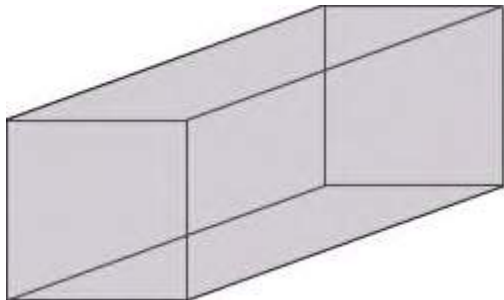
(e)

Question 2: Make a deep drawing of a box which looks like this.



Answer:

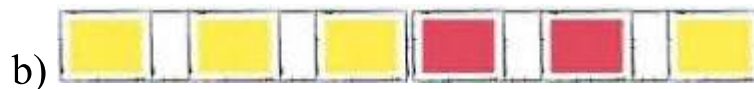
The deep drawing of the given box is shown below.



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Question 1:

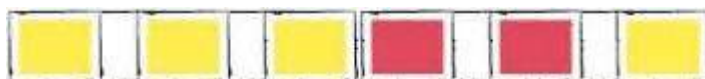
• If you look at the bridge from the top, how will it look? Choose the right drawing below:



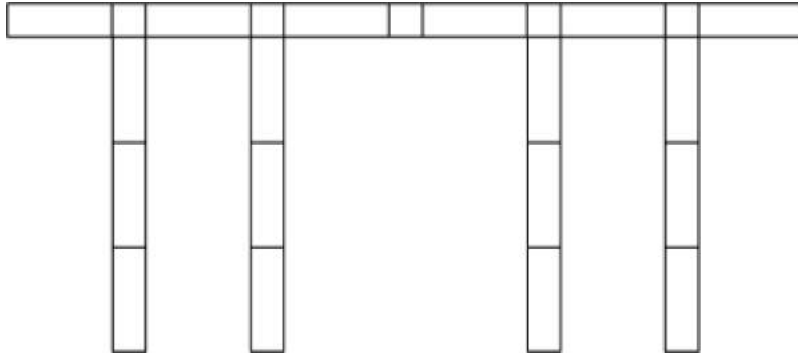
• Look at the photo and try to make a deep drawing of this bridge.

Answer:

The top view of the bridge is shown below.



The deep drawing of the bridge is shown below.



Question 2: Make drawings to show how this bridge will look

- From the top
- From the front
- From the side

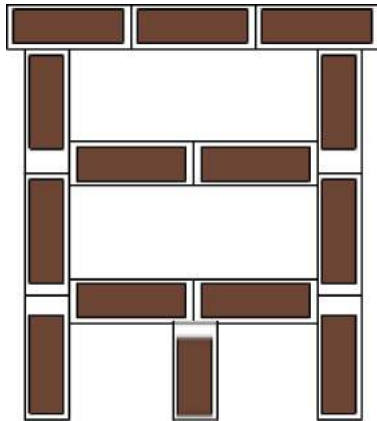


Answer:

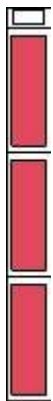
The top view of the bridge is shown below.



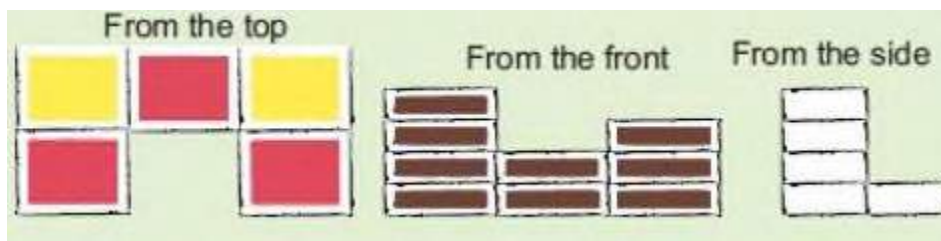
The front view of the bridge is shown below.



The side view of the bridge is shown below.



Question 3: Make a matchbox model which looks like this.



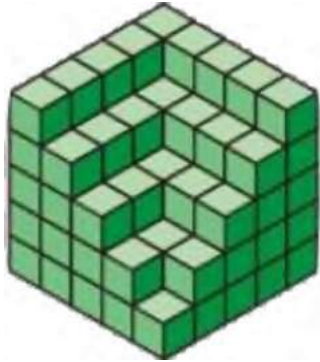
- Also make a deep drawing of the model in your notebook.

Answer:

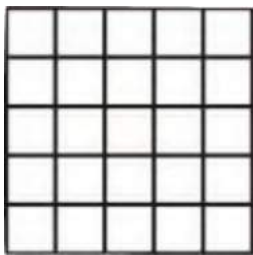
Disclaimer: Students are advised to prepare the answer on their own.

Question 4: How many cubes are needed to make this interesting model?

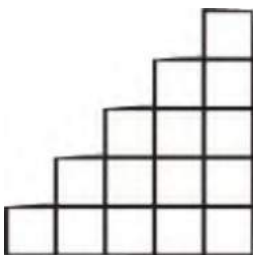
- Here are some drawings of the model. Mark the correct top view drawing with 'T' and the correct side view drawing with 'S'.



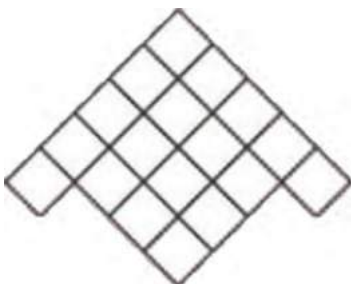
(a)



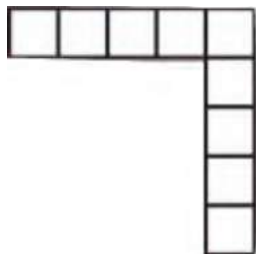
(b)



(c)



(d)



Answer:

Number of cubes in the top layer = $4 + 5 = 9$

Number of cubes in the second layer from top = $4 + 5 + 3 + 4 = 16$

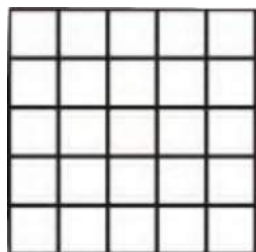
Number of cubes in the third layer from top = $4 + 5 + 3 + 4 + 2 + 3 = 21$

Number of cubes in the fourth layer from top = $4 + 5 + 3 + 4 + 2 + 3 + 2 + 1 = 24$

Number of cubes in the bottom layer = $4 + 5 + 3 + 4 + 2 + 3 + 2 + 1 + 1 = 25$

Total number of cubes in the model = $9 + 16 + 21 + 24 + 25 = 95$

The correct drawing for the top and side view is given below:



T, S