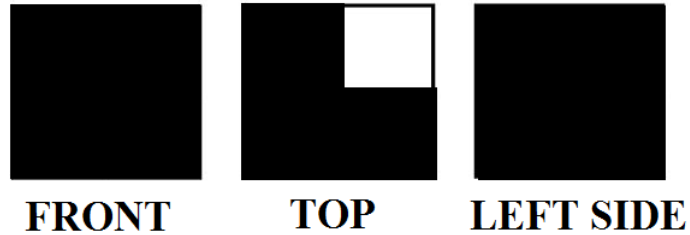


2. Make a 3D solid that has the following projections.



a. Find all possible solids that have these projections.

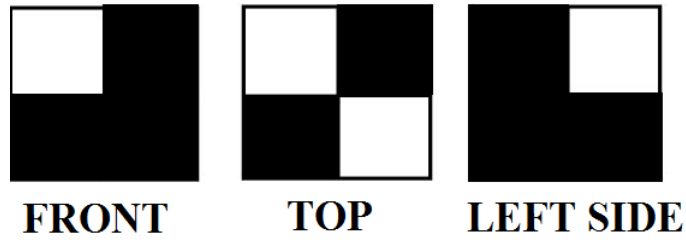
b. For each of these solids, count the number of cubes used and record in the table:

Solid	Number of cubes used
1	
2	<b>6</b>
3	<b>5</b>
4	
5	
6	
7	

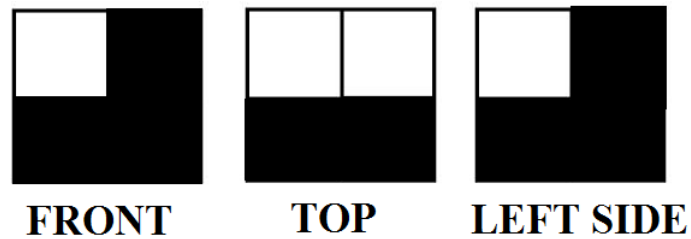
c. How many different solids have these three projections?

**Solution: 2**

7. Given the top and the front projections, fill in what the left side projection is. Hint: Try to build the solid first.



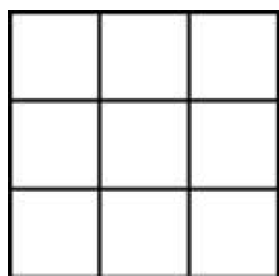
8. Given the top and the front projections, fill in what the left side projection is. Hint: Try to build the solid first.



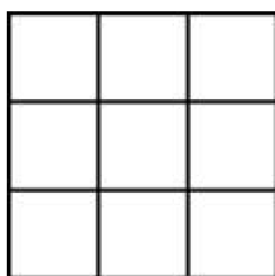
Use the blocks you have brought for this question:

1. Build a 3D solid over a square of size  $3 \times 3$  base so that it fits into a  $3 \times 3 \times 3$  cube. (This means you will use no more than 27 blocks).

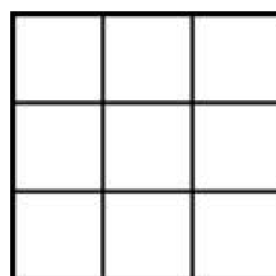
Shade the grids below to indicate the top, front, and left side projections of the 3d solid you have built.



**FRONT**



**TOP**



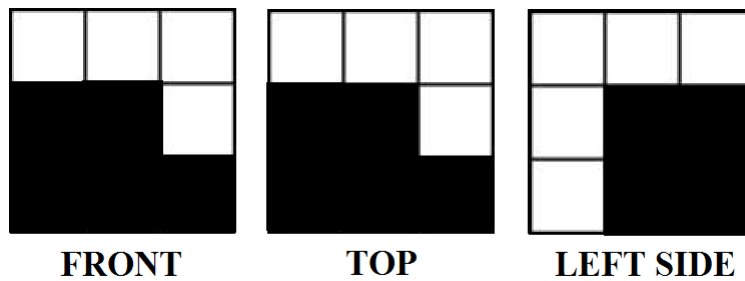
**LEFT SIDE**

- a. Share the top, front, and side projections of your solid with a partner. Are your projections the same? Are your solids the same?

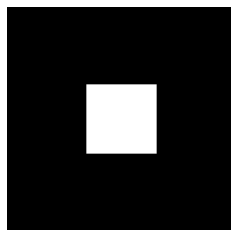
2. Do you think it is possible to have 2 *different* solids over the base of size  $3 \times 3$  that have the same projections?

If yes, build such a pair of solids and shade in their projections below.

**Solution:** (ONE example, there are many more solutions that can work)



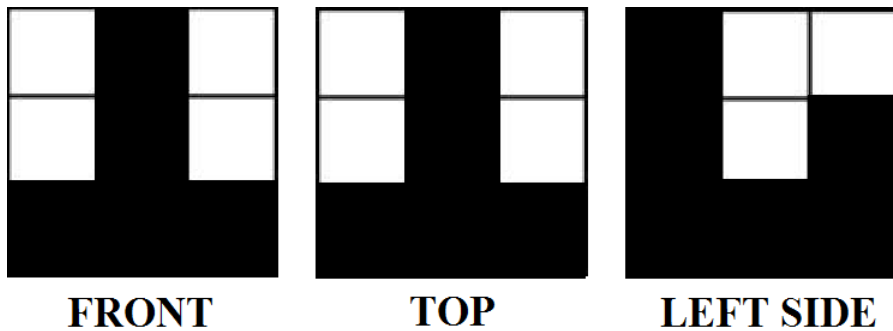
3. Katja drew this projection:



a. Is it the top, front or side projection? How do you know?

**Solution:** Must be a top projection, otherwise the middle block in the top row would be “floating”, which is impossible.

4. Make a 3D solid that has the following projections:



a. Find all possible solids that have these projections.

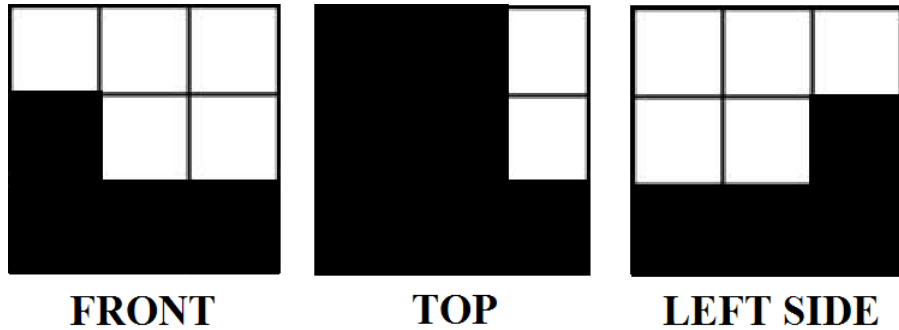
b. For each of these solids, count the number of cubes used and record in the table

Solid	Number of cubes used
1	
2	<b>8</b>
3	
4	
5	

c. How many different solids have these three projections?

**Solution: 1**

5. Make a 3D solid that has the following projections.



a. Find all possible solids that have these projections.

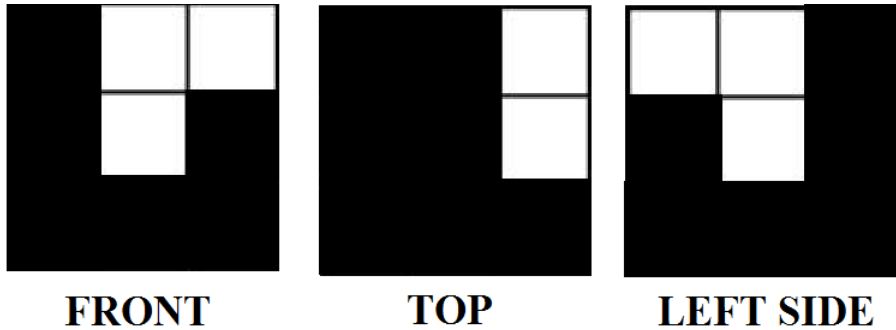
b. For each of these solids, count the number of cubes used and record in the table below:

Solid	Number of cubes used
1	
2	8
3	
4	
5	

c. How many different solids have these three projections?

**Solution: 1**

6. Make a 3D solid that has the following projections.



a. Find all possible solids that have these projections.

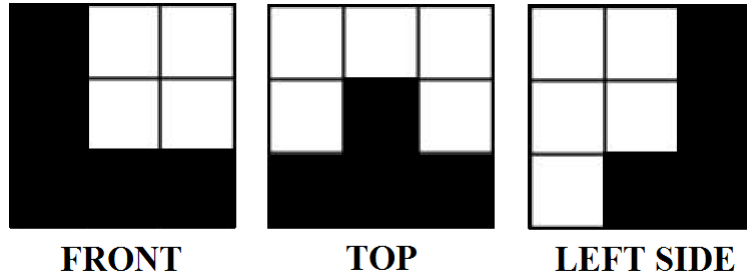
b. For each of these solids, count the number of cubes used and record in the table

Solid	Number of cubes used
1	
2	<b>11</b>
3	
4	
5	

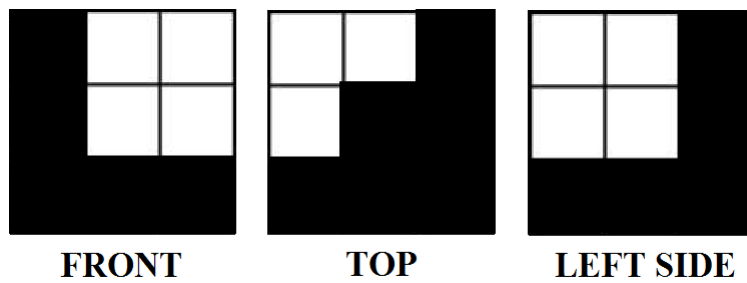
c. How many different solids have these three projections?

**Solution: 1**

7. Given the top and the front projections, fill in what the left side projection is. Hint: Try to build the solid first.

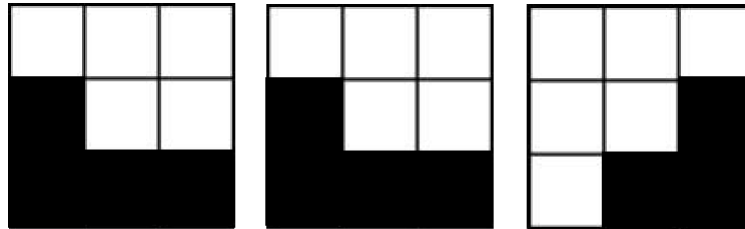


8. Given the top and the front projections, fill in what the left side projection is. Hint: Try to build the solid first.





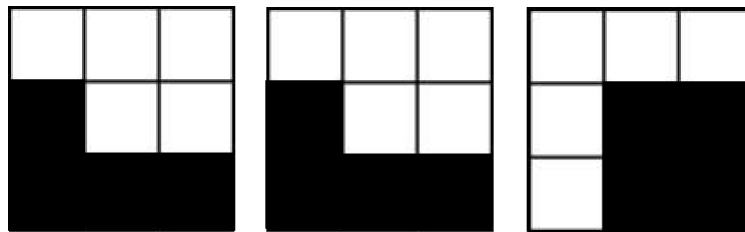
8. Given the top and front projections, fill in what the left side projections can be. There is more than one possible answer! How many solutions can you find?



**FRONT**

**TOP**

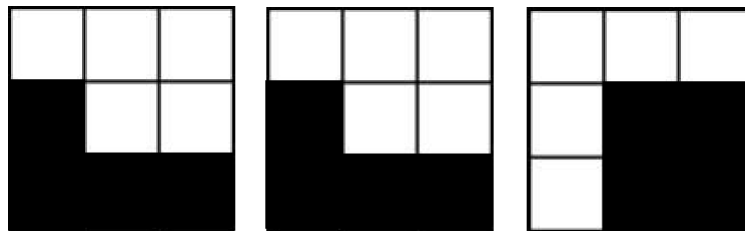
**LEFT SIDE**



**FRONT**

**TOP**

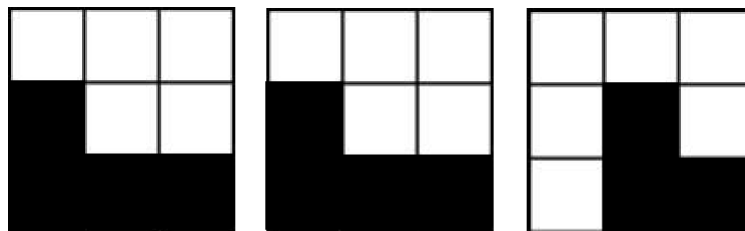
**LEFT SIDE**



**FRONT**

**TOP**

**LEFT SIDE**



**FRONT**

**TOP**

**LEFT SIDE**