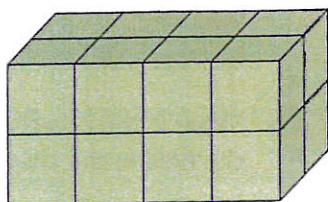


# Volume and Capacity

Keep your calculating cap on because there are more questions on the way — it's time for volume and capacity. Volume is the amount of space a shape takes up, and capacity is the amount that something can hold.

## Examples

Find the volume of this cuboid.



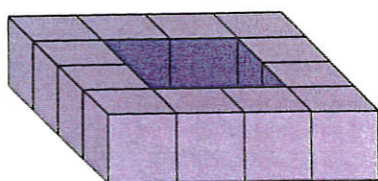
1 cube =  $1 \text{ cm}^3$

There are 8 cubes at the front of the cuboid.

The cuboid is 2 cubes deep, so there are  $2 \times 8 = 16$  cubes in total.

The volume of each cube is  $1 \text{ cm}^3$ , so the volume of the cuboid is  $16 \text{ cm}^3$ .

Find the capacity of the hole in this shape.



1 cube =  $1 \text{ cm}^3$

The hole in the middle of the shape is 4 cubes big, or  $4 \text{ cm}^3$ .

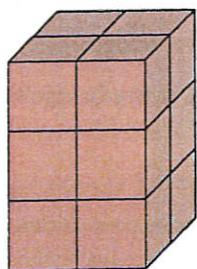
This means that the capacity of the hole is  $4 \text{ cm}^3$ .



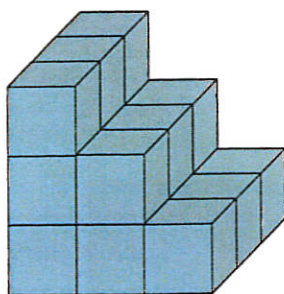
## Set A

Each cube in these 3D shapes has a volume of  $1 \text{ cm}^3$ .  
Work out the volume of these shapes:

1

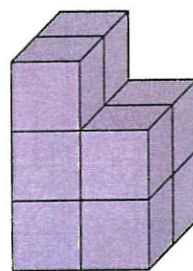


3



5

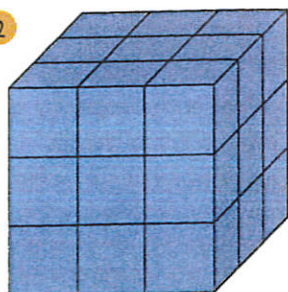
Look at the shape below.



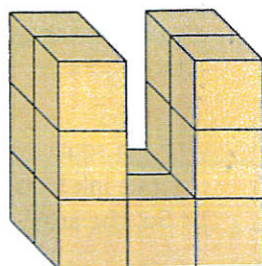
1 cube =  $1 \text{ cm}^3$

How many cubes would you need to add to make the shape have a volume of  $14 \text{ cm}^3$ ?

2

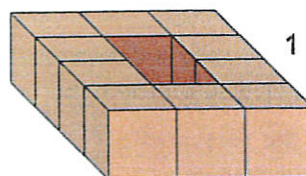


4



6

What is the capacity of the hole in this shape?

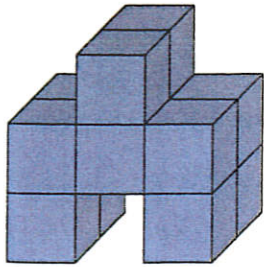


1 cube =  $1 \text{ cm}^3$

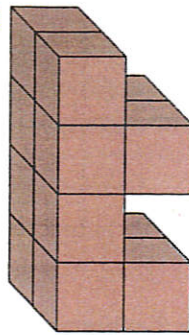
## Set B

Each cube in these 3D shapes has a volume of  $1 \text{ cm}^3$ .  
Work out the volume of these shapes:

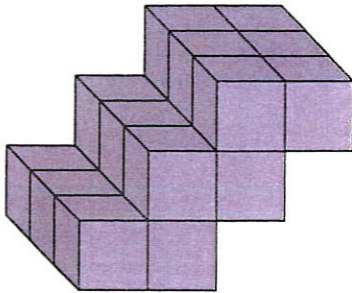
1



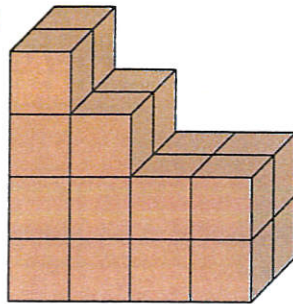
3



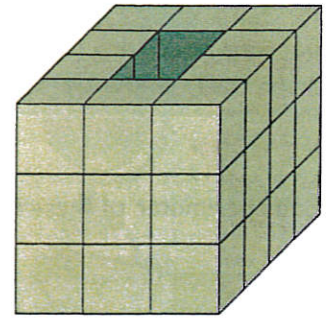
2



4



Bonnie builds this shape out of centimetre cubes.  
Each layer is identical.



5 What is the capacity of the hole in the shape?

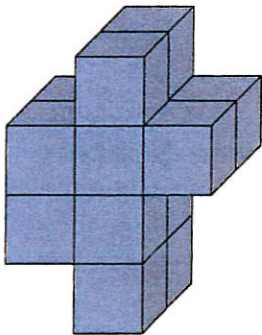
Bonnie builds another shape using identical layers to the shape above, but it is 7 cm tall.

6 Work out the capacity of the hole in the bigger shape.

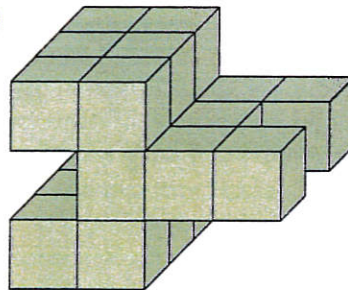
## Set C

Each cube in these 3D shapes has a volume of  $1 \text{ cm}^3$ .  
Work out the volume of these shapes:

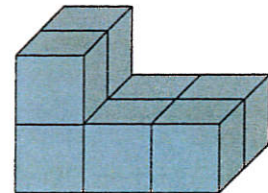
1



3



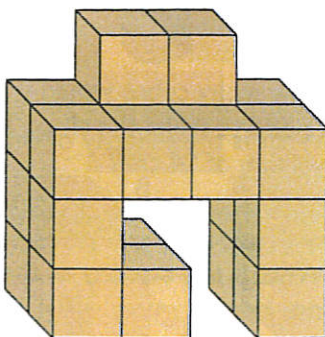
5 Sanjay builds this shape out of centimetre cubes.



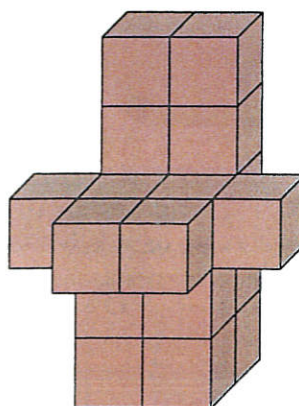
He makes an identical shape and joins the two shapes to make a bridge.

What is the bridge's volume?

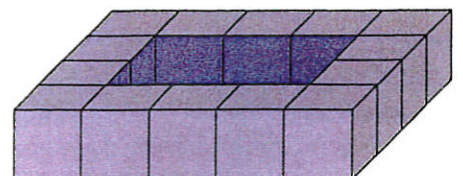
2



4



6 The shape shown below is made of centimetre cubes.  
Kim stacks up three of this shape.



What is the capacity of the hole in Kim's stack?