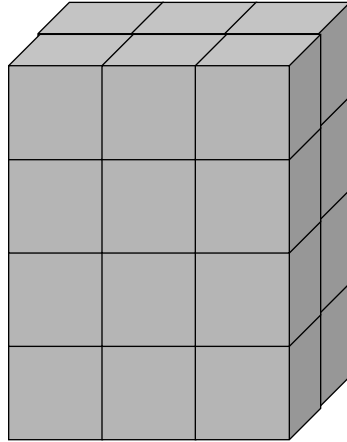


**V1**

The figure below is made of cubes.

Each cube measures 1 centimeter by 1 centimeter by 1 centimeter.

What is the volume of the figure?



- a) 26 square centimeters
- b) 52 square centimeters
- c) 12 cubic centimeters
- d) 24 cubic centimeters

Explain your choice.

**V2**

Harley wants to determine the volume of the figure below.



Which method should Harley use?

- a) add the lengths of all 12 edges of the figure
- b) multiply the length of the figure times the width of the figure times the height of the figure
- c) add up the areas of six faces of the figure
- d) multiply the length of the figure times the width of the figure.

Explain your choice.

**V3**

Figure 1 below was built from blocks of this size:

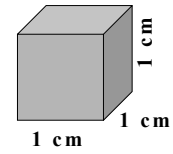
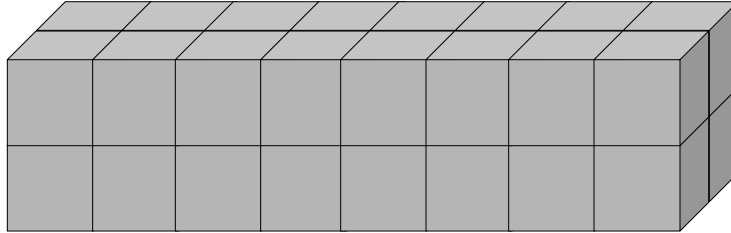
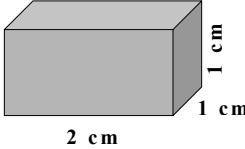


Figure 1

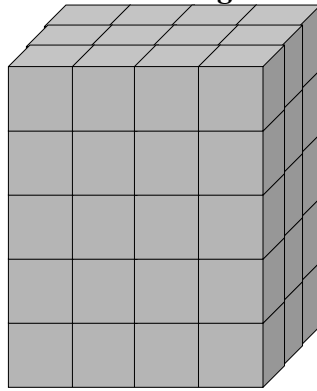


How many blocks this size:  does it take to build a figure with the same volume as Figure 1?

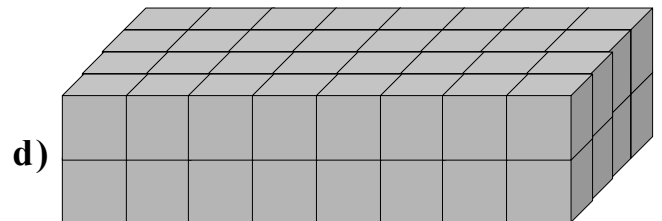
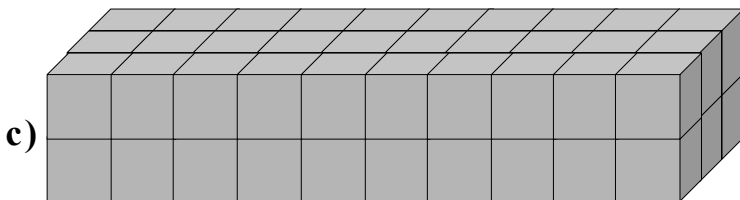
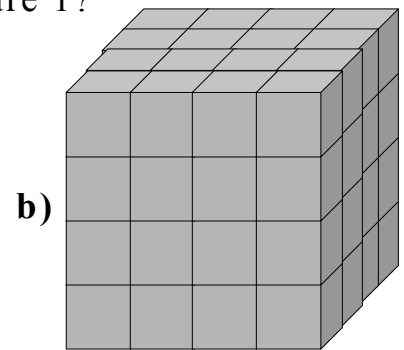
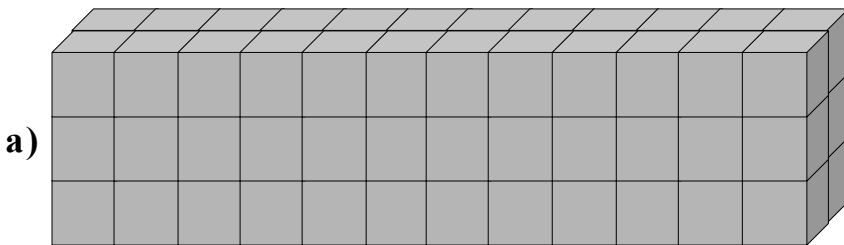
Explain your answer.

V4

Look at Figure 1 below.

*Figure 1*

Which shape below has the same volume as Figure 1?

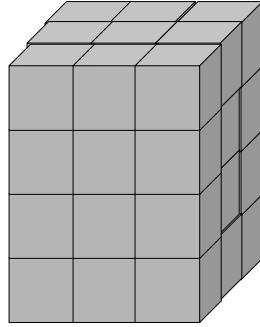


Explain your choice.

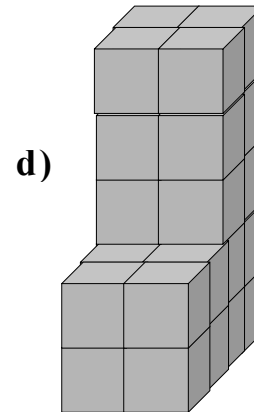
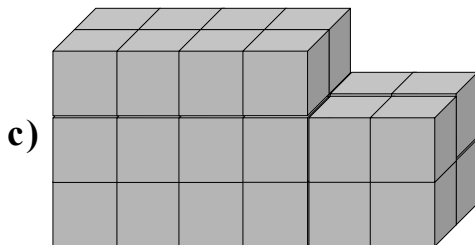
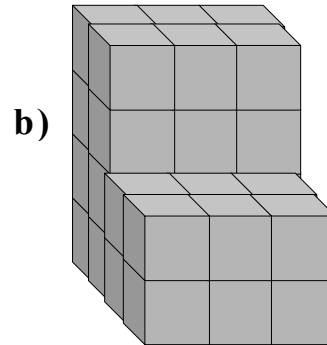
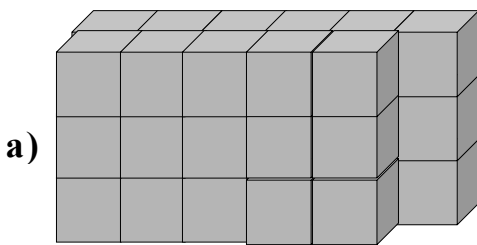
## V5

Look at Figure 1 below.

*Figure 1*



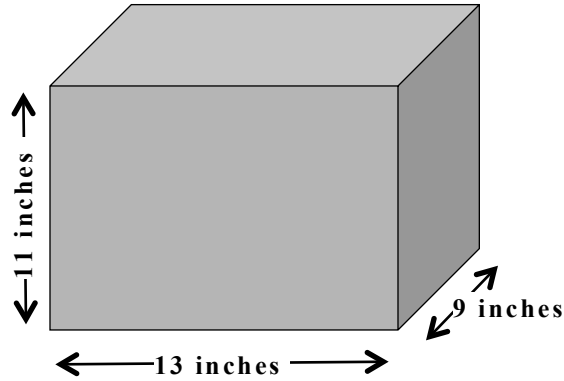
Which shape below has the same volume as Figure 1?



Explain your choice.

**V6**

What is the volume of the figure below?

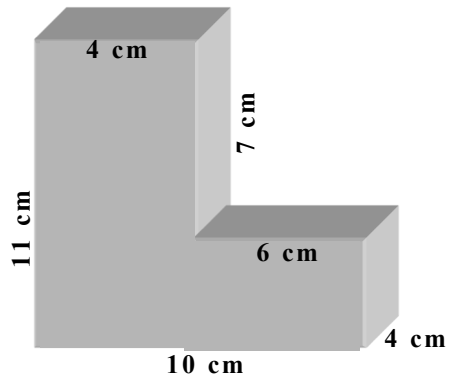


- a)  $33 \text{ inches}^3$
- b)  $143 \text{ inches}^3$
- c)  $1287 \text{ inches}^3$
- d)  $99 \text{ inches}^3$

Explain your choice.

**V7**

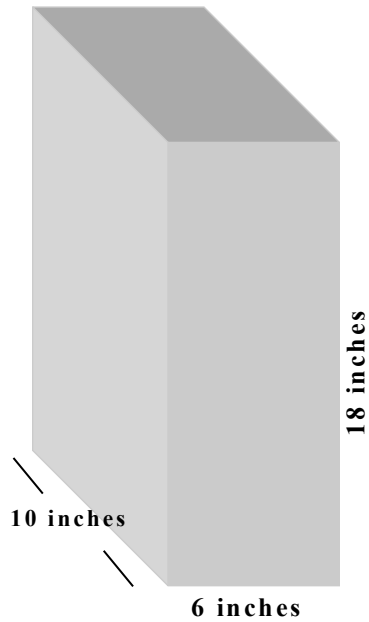
What is the volume of the figure below?



Show your work.

**V8** (

The tank below is half filled with water.



What are the dimensions of another tank that, when full, holds this exact same amount of water?

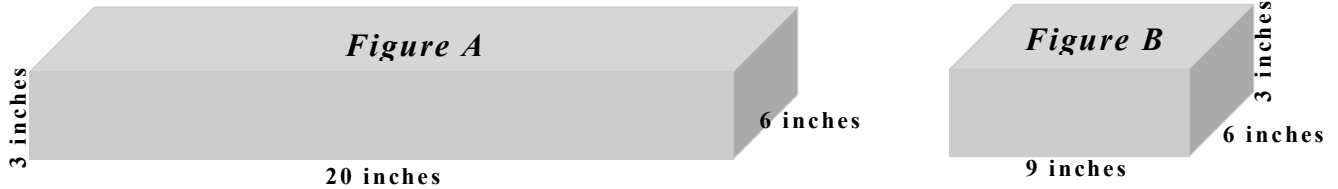
- a) 6 inches x 9 inches x 10 inches
- b) 3 inches x 9 inches x 5 inches
- c) 5 inches x 9 inches x 6 inches
- d) 18 inches x 3 inches x 5 inches

Explain your choice.



**V9**

Abby put Figures A & B together to create a new shape.



Abby's new shape is shown below

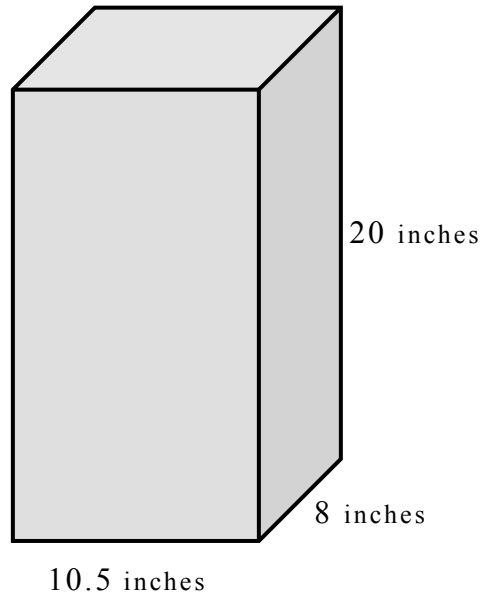


What is the volume of Abby's new shape?

Show your work.

**V10**

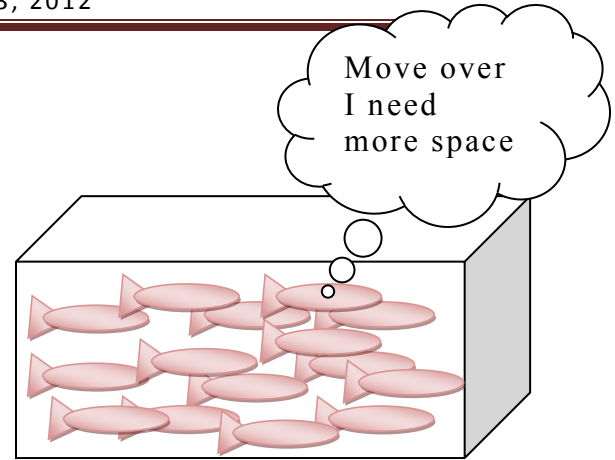
How many one-inch cubes will it take to completely fill this figure?



Show your work.

**V11 [Extended Task]****The Fish Tank Dilemma**

The Johnson family is buying fish. A friend has given them a fish tank. The Johnsons need to figure out how many fish they should buy based on the size of the tank they have been given.



Dimensions of fish tank:

24 inches x 12 inches x 16 inches.

The store clerk told them that for each inch of fish, you need one gallon of water. A gallon of water is equal to about 230 cubic inches. <http://freshaquarium.about.com/cs/beginnerinfo/a/fishcalc.htm>

What is the greatest number of goldfish that are 2 inches long as adults could comfortably fit into the tank? Show your work.

**V12[Extended Task]**

A company sells Styrofoam packing material for shipping breakable objects. The packing material weighs about  $\frac{1}{5}$  lbs. per cubic foot.



The shipping company needs to fill a box with the dimensions  $1\frac{4}{5}$  ft. x  $1\frac{1}{3}$  ft. x 3 ft. with the Styrofoam packing material.

How much will the Styrofoam packing materials that fill the box weigh?

Show your work.

## V13[Extended Task]

### Let it Snow

Snow can be light and fluffy and easy to shovel or wet and heavy and hard to shovel.

On two different days Richard shoveled the snow off his driveway.

On Monday the snow was light and fluffy and 14 inches deep.

On Friday the snow was wet and heavy and 6 inches deep.

He knew that there was more snow on Monday than Friday because the snow was deeper, but wasn't sure on which day he actually shoveled more snow if he considered the weight of the snow.

To solve this problem he measured his driveway.

Driveway: 20 feet x 10<sup>1</sup>/<sub>2</sub> feet.

He also found the weights of snow per cubic foot on the WEB.

Wet, heavy snow: 15 lbs./cubic foot

Light, fluffy snow: 7 lbs./cubic foot

[http://wiki.answers.com/Q/How\\_much\\_does\\_a\\_cubic\\_foot\\_of\\_snow\\_weigh](http://wiki.answers.com/Q/How_much_does_a_cubic_foot_of_snow_weigh)

On which day did Richard shovel the most snow in weight and by how much? Show your work.