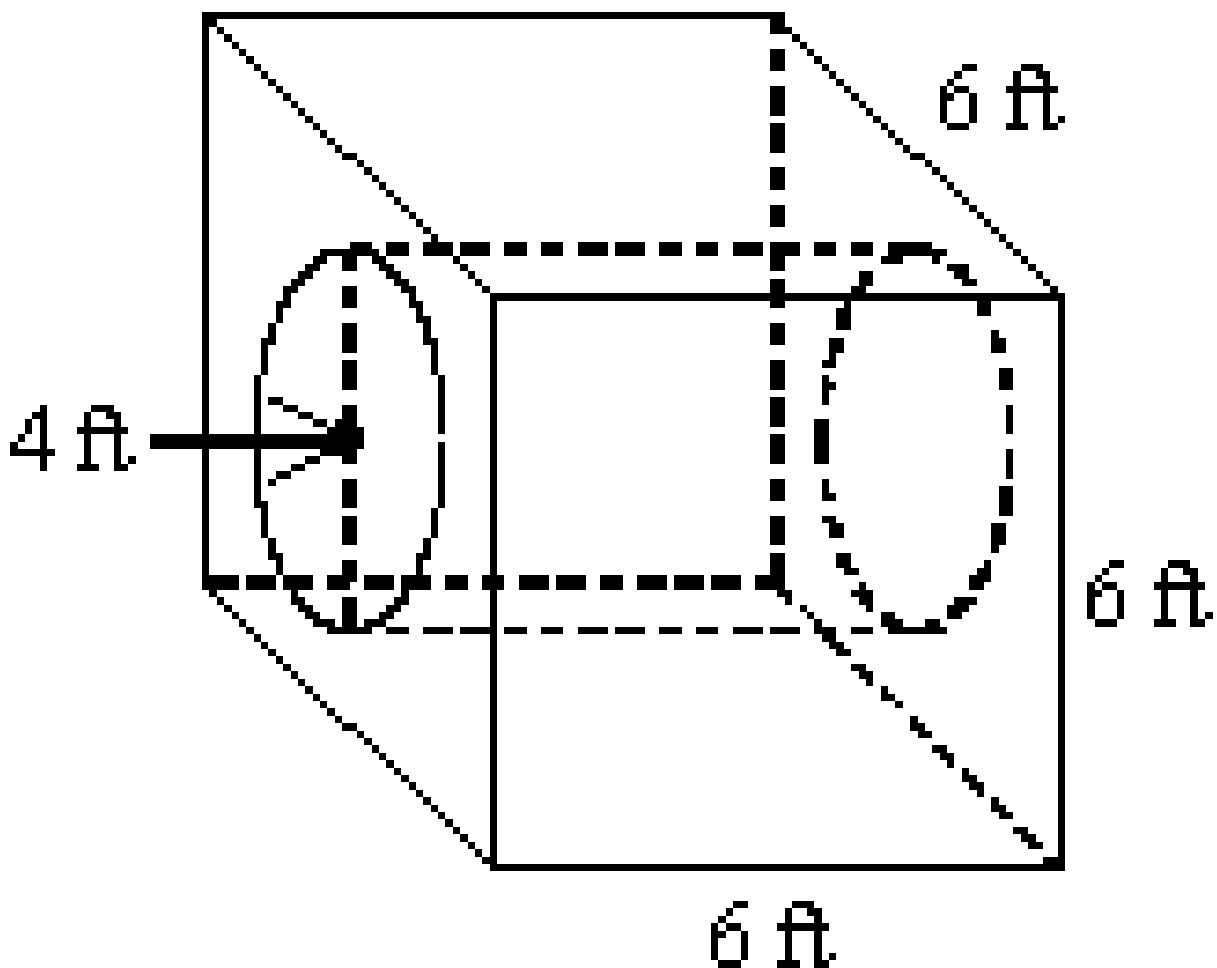
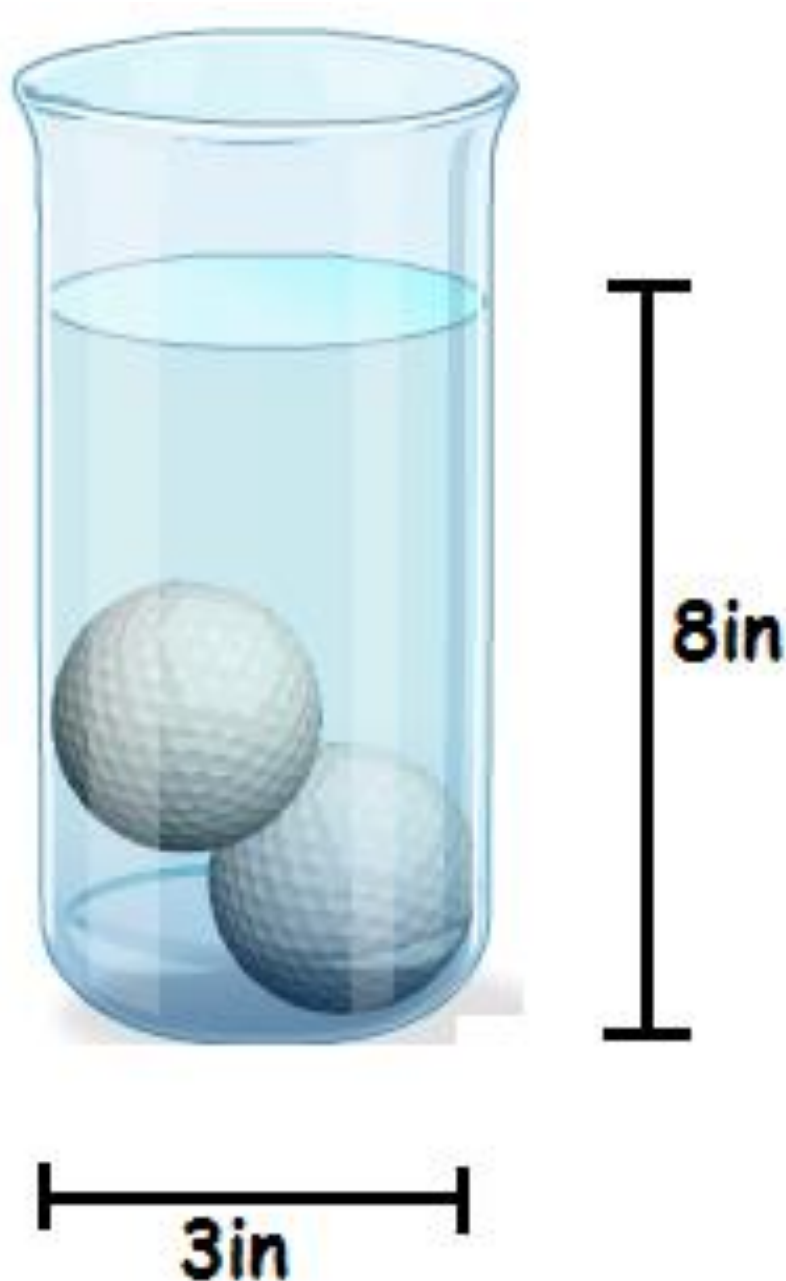


#1

A concrete block has a cylindrical hole 4 feet in diameter drilled through it to allow a pipe to pass through. How many cubic feet of concrete are left in the block? Round your answer to the nearest tenth.



#2 The picture below shows 2 golf balls in a beaker of water. The beaker is a cylinder with a diameter of 3 inches, and is full of water up to 8in with 2 golf balls in it. If the radius of a golf ball is 0.85in, what is the volume of just the water?  
Round your answer to the nearest tenth.



#3



This is the Luxor Hotel in Las Vegas Nevada.

It is a giant pyramid that has a square base with side lengths of 600ft, and a height of 350ft.

Pete was hired to clean the outside windows.

The *entire* outside is windows (4 slanty-walls).

If a bottle of Windex covers  $200 \text{ ft}^2$  and costs \$4.50.

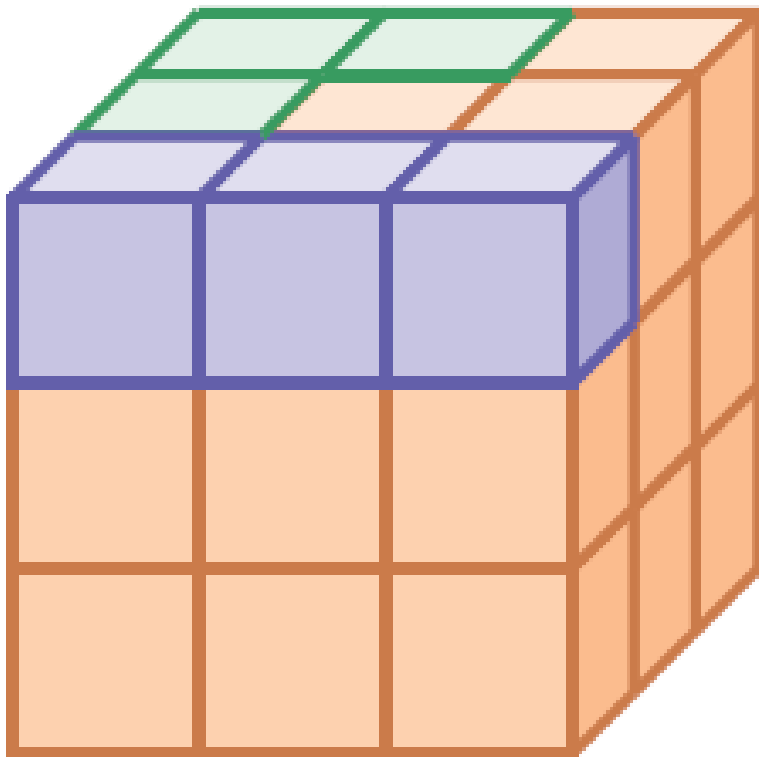
How much does Pete need to spend on Windex?

#4

The cube shown is formed with 27 identical cubes. All the cubes you cannot see in the picture are orange cubes.

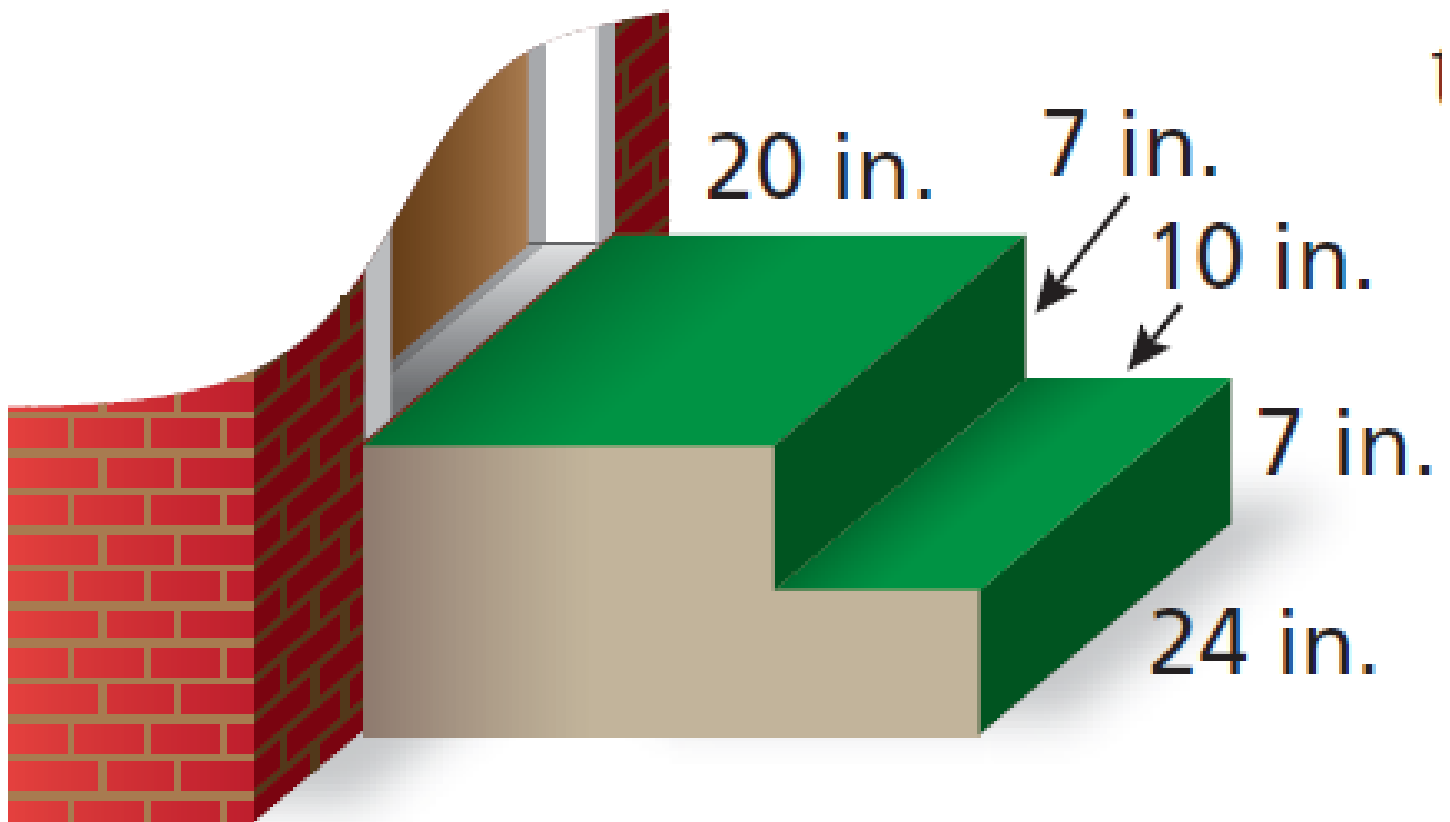
What is the surface area of the object formed by *just the green cubes*?

What is the surface area of the object formed by *just the purple cubes*?



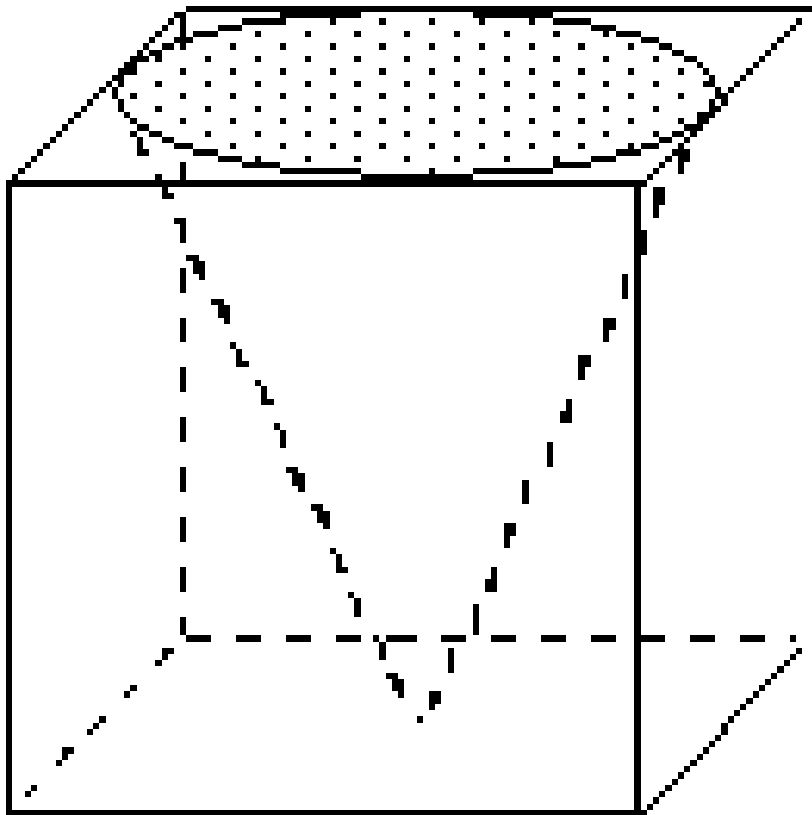
#5

You painted the steps to an apartment green. A diagram of the steps is shown, and all the parts you painted are shown. How much paint did you use? (surface area of the painted regions)



#6

A machinist drilled a conical hole into a cube of metal as shown. If the cube has sides of length 8 cm, what is the volume of the metal after the hole is drilled? Round to the nearest tenth.



#7

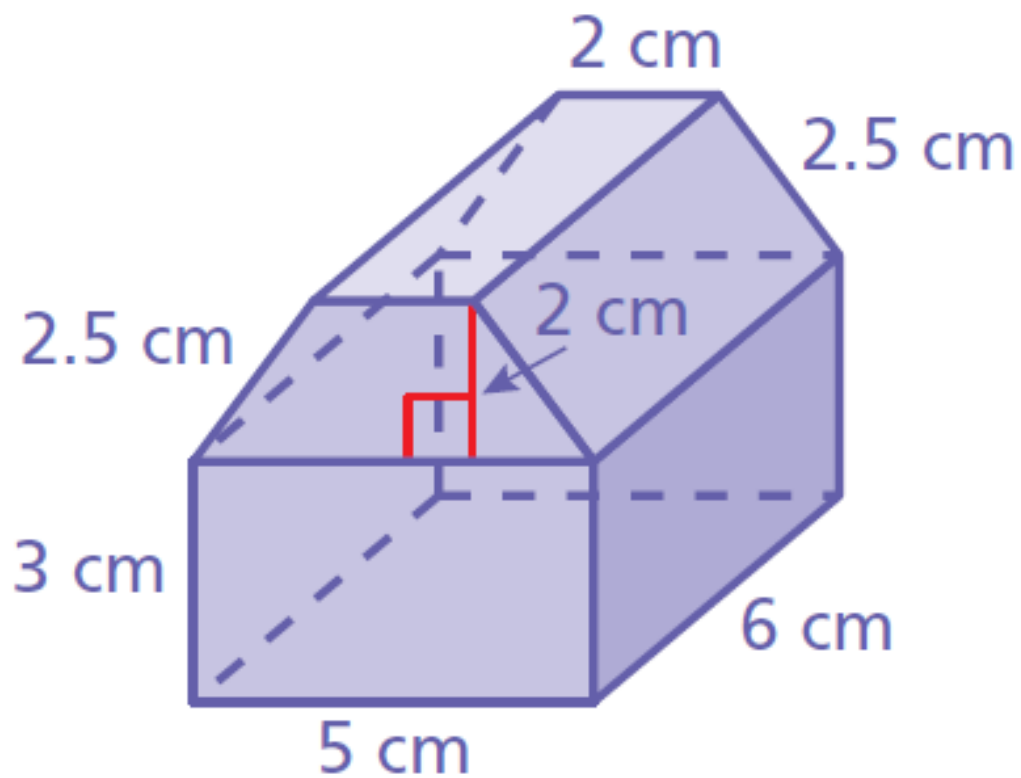


An Ice cream "scoop" is approximately a sphere with a 2 inch diameter.

The container ice cream comes in is a cylinder with a 4 inch diameter, and 6 inch height. How many "scoops" are there in the container?

#8

Find the volume of the toy house shown:





#9

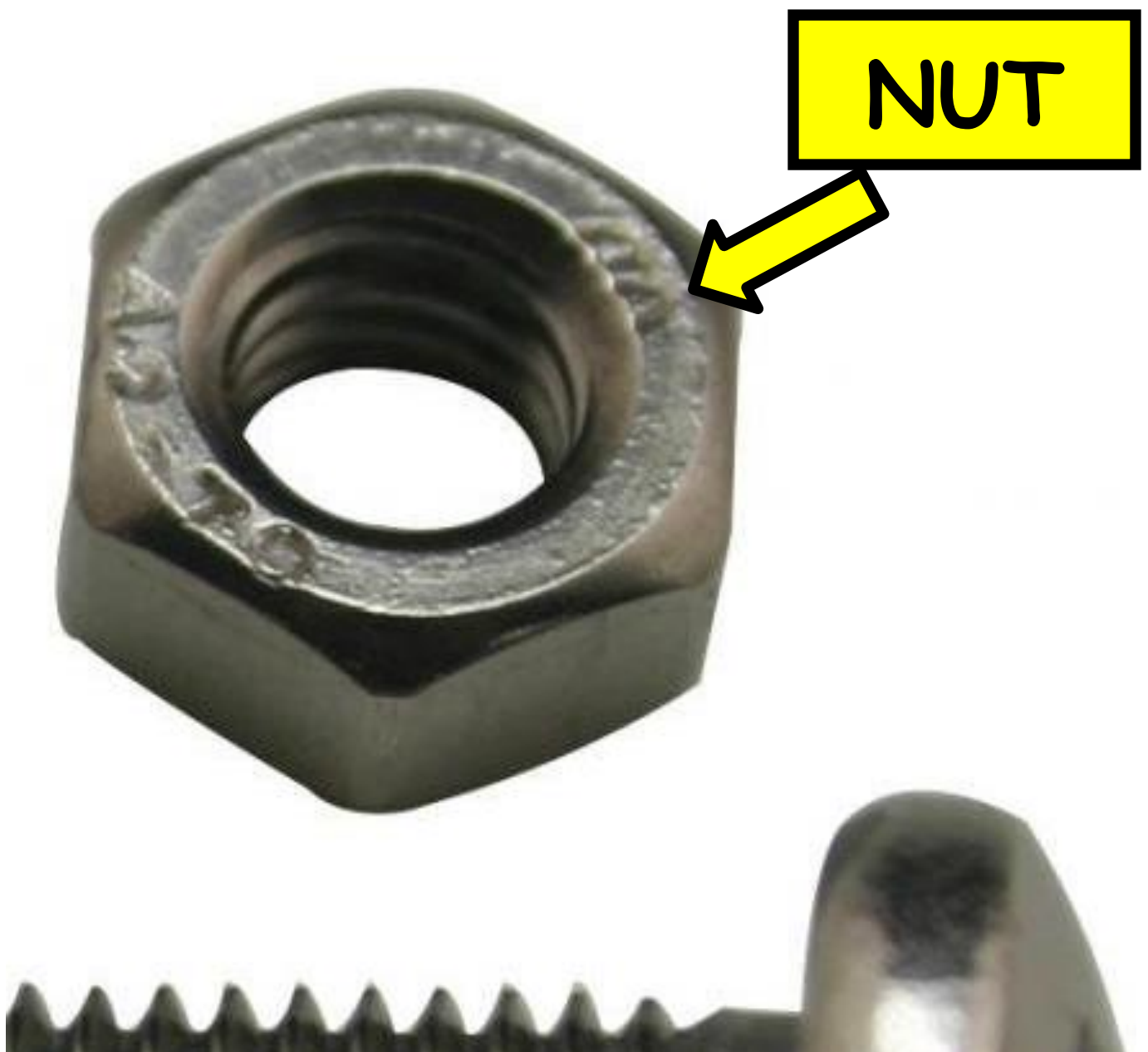


50 M&M "minis" fit in the little cylinder with a 1 inch diameter and a 4 inch height. How many would fit in a 2 ft by 2ft by 2ft box?

#10

A "nut" is a hexagonal prism with a cylindrical hole  
(The hole is "threaded" for a screw, but we will ignore that for this problem)

If each side of this nut has a length of 10mm, an apothem of 8.7mm, and a height (of the prism) of 6mm. The hole in the nut has a radius of 5mm. How many cubic millimeters of aluminum are needed to make this object?



#11

# STAR WARS



This building is an 8 ft diameter hemisphere (half of a sphere) on top of a rectangular prism that is 12 ft wide, 10 ft long, and 9 ft high.

What is the volume of this house?

#12

Find the volume of the pencil shown if the radius of the pencil is 0.25cm.



#13

Mr. B's basement is 20 ft wide and 18 feet long.  
It filled with water 3 ft deep...

1. How many cubic feet of water is in the basement?
2. If there are 7.5 gallons in a cubic foot, how many gallons of water are in the basement?



#14

The weight of 1 cubic foot of water is 62.5lbs.



If this tank  
(1x2x3) is full  
of water, how  
much will it  
weigh?



#15

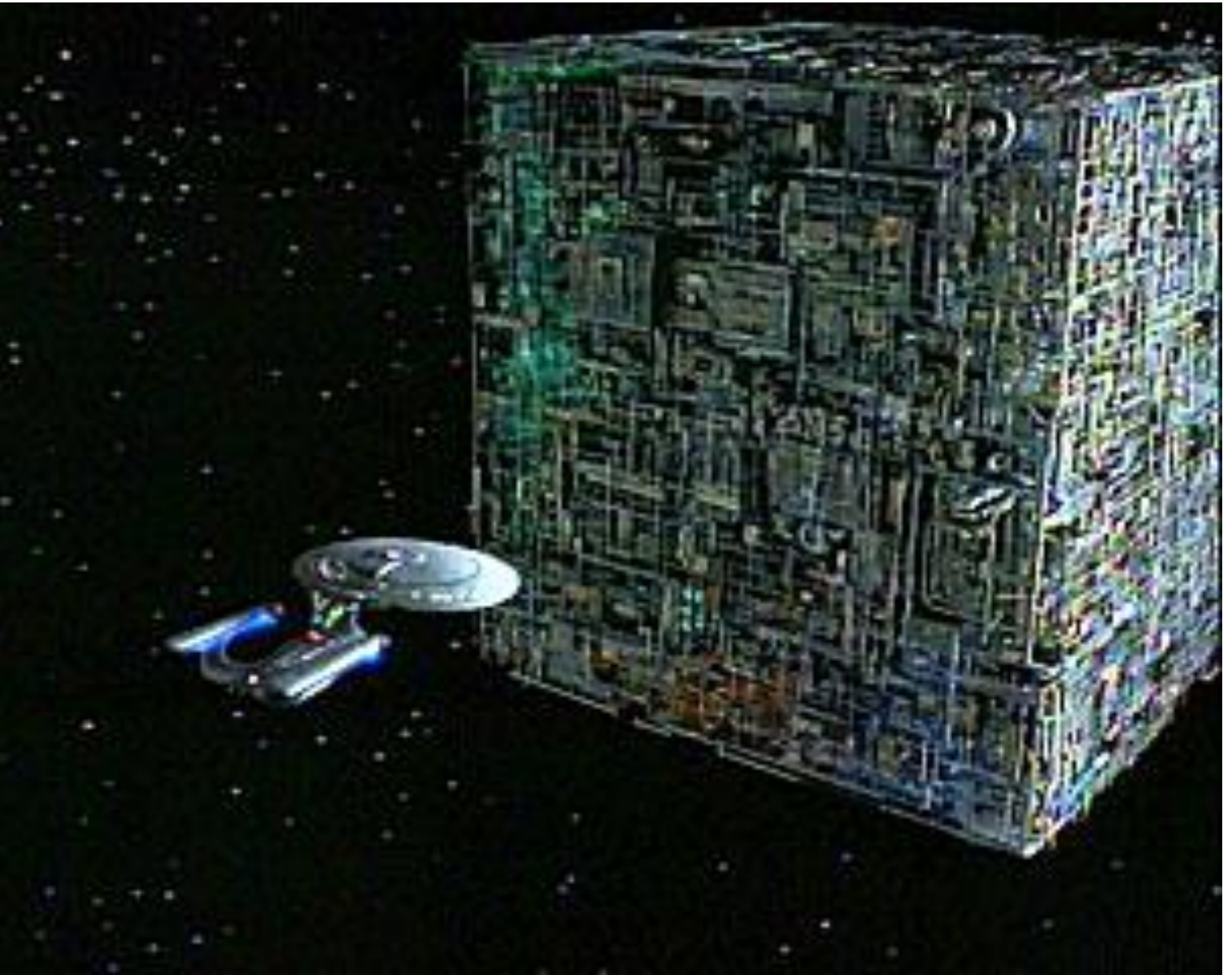
Planet X is covered in alien slime. If the planet has a radius of 1,000 miles, and the slime covers 72% of the planet, what is the surface area of the slime?



#16

A cube has a volume of  $42,875\text{m}^3$ .

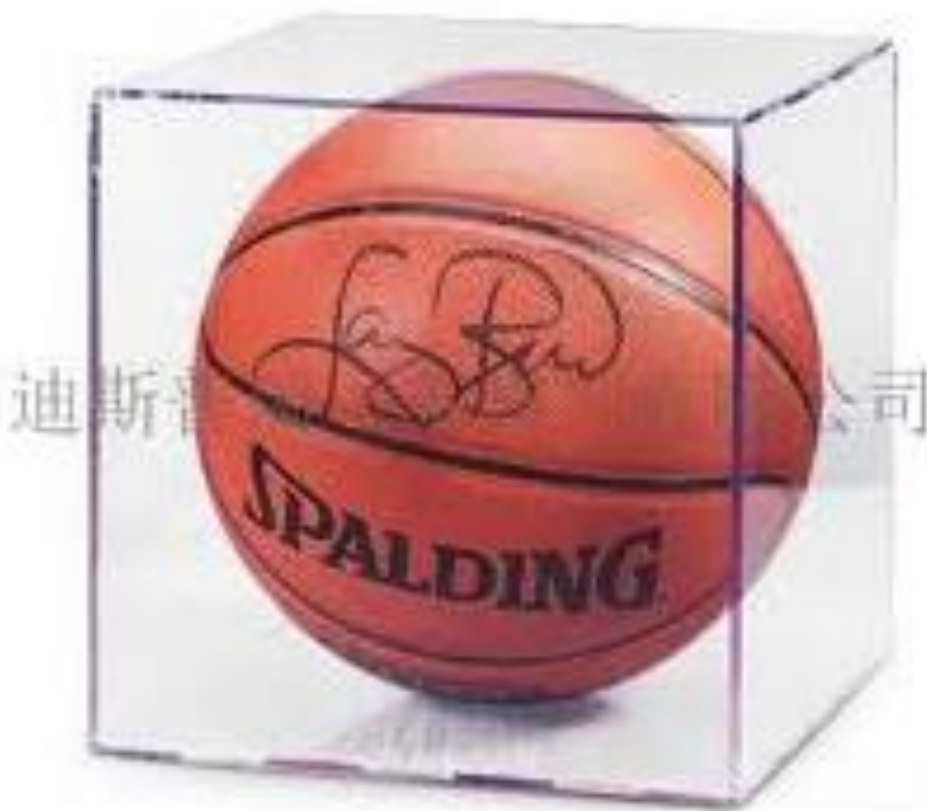
What is the surface area of this cube?





#17

How much material (surface area) is the smallest cube that can hold a regulation basketball? (a regulation basketball has a 4.7 inch radius)



#18

This is a watertower. The radius of the hemisphere, and cylinder and cone is 12ft. if the cylinder is 20 ft high, and the cone is 10 ft high, how much (cubic ft) of water fits in this water tower?

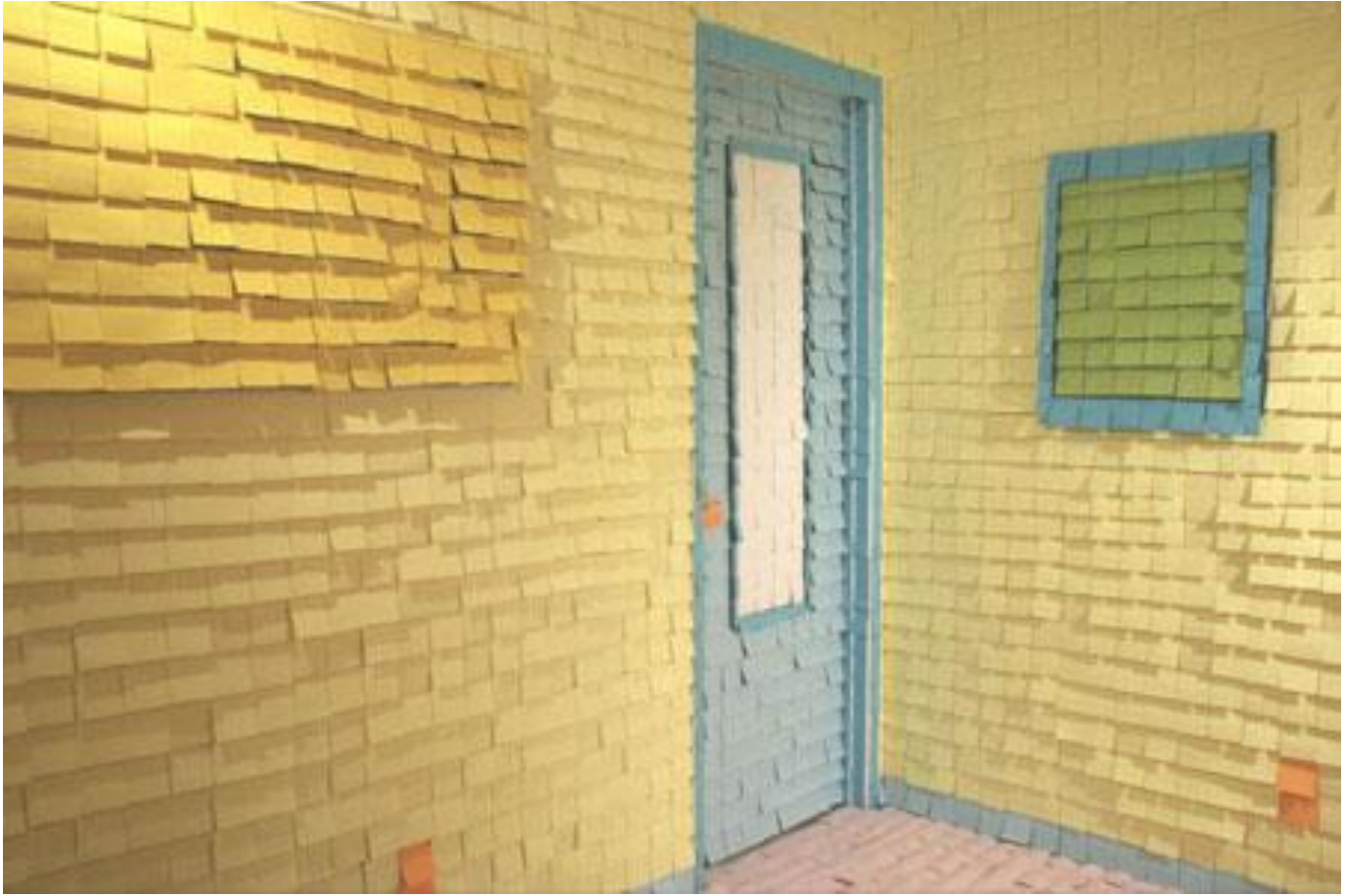


#19

Each ball of playdough shown has a 1 inch radius. If they are all smoooooshed together to make a combined sphere, what would the radius be?



#20 As a prank, Jocelyn's friends covered her room in post-it notes.



Her room is 10ft wide, 11ft long and 8ft high. 4 walls, the ceiling and floor were all covered in 2in square post-its. How many post-it notes were needed to cover her room?