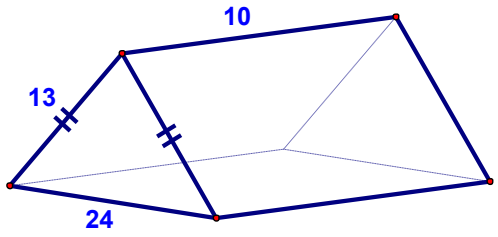
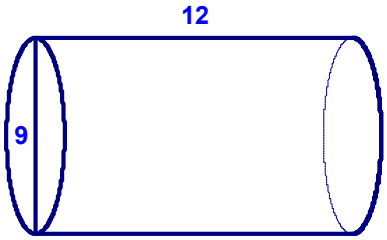
9.

Find the volume and the total surface area of the prism shown.



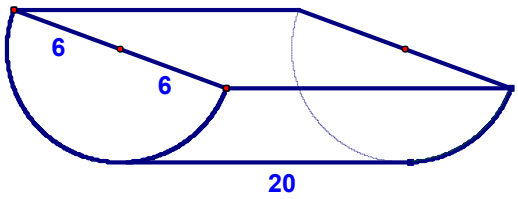
10a.

Find the volume and the total surface area of the right cylindrical solid shown.



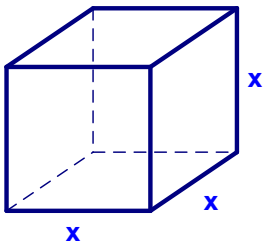
10b.

Find the volume and the total surface area of the right cylindrical solid shown.



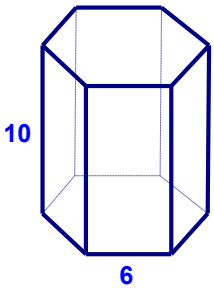
11.

When Hilda computed the volume and the surface area of a cube, both answers had the same numerical value. Find the length of one side of the cube.



12.

Find the volume and the surface area of the regular hexagonal right prism.

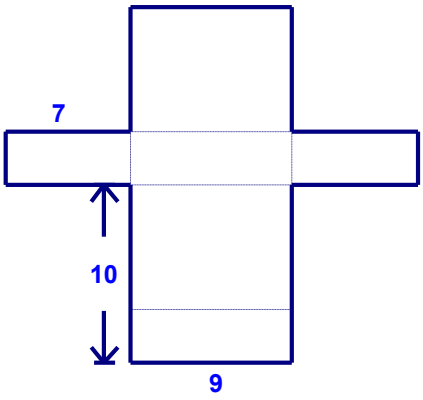


13.

Find the volume of a cube in which a face diagonal is 10.

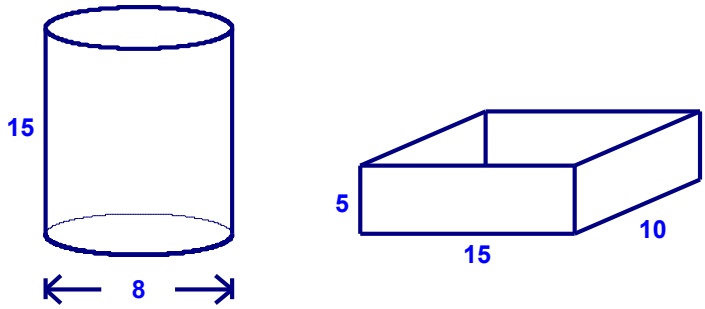
15.

A rectangular container is to be formed by folding the cardboard along the dotted lines. Find the volume of this container.



16.

The cylindrical glass is full of water, which is poured into the rectangular pan. Will the pan overflow? If yes, by how much? All measurements are in cm.

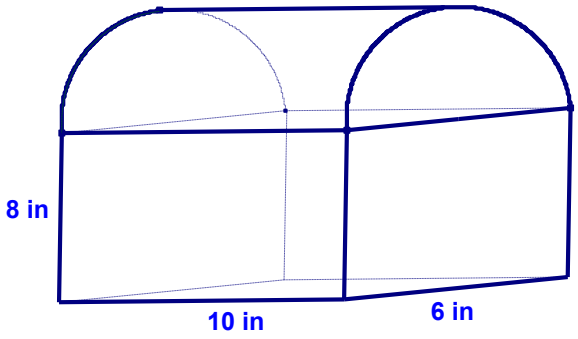


17.

Jim's lunch box is in the shape of a half cylinder on a rectangular box. To the nearest whole unit, what is

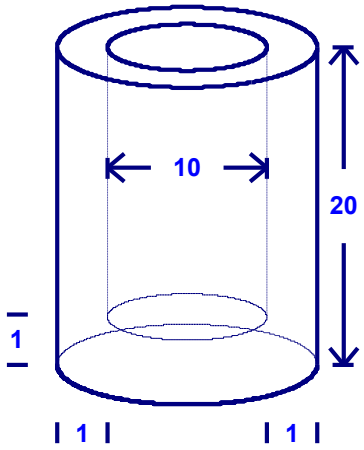
a. The total volume it contains?

b. The total area of the sheet metal needed to manufacture it?



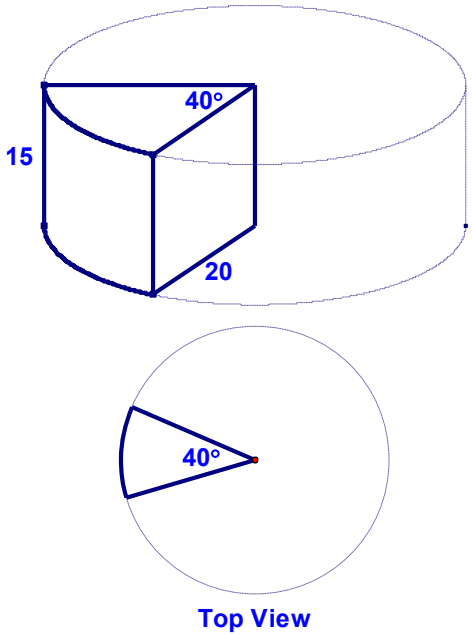
18.

A cistern is to be built of cement. The walls and bottom will be 1 ft. thick. The outer height will be 20 ft. The inner diamter will be 10 ft. To the nearest cubic foot, how much cement will be needed for the job?



19.

A wedge of cheese is cut from a cylindrical block. Find the volume and the total surface area of this wedge.



20.

An ice cube manufacturer makes ice cubes with holes in them. Each cube is 4 cm on a side and the hole is 2 cm in diameter.

a. **To the nearest tenth, what is the volume of ice in each cube?**

b. **To the nearest tenth, what will be the volume of the water left when ten cubes melt? (Water's volume decrease by 11% when it changes from a solid to a liquid.)**

c. **To the nearest tenth, what is the total surface area (including the inside of the hole) of a single cube?**

d. **The manufacturer claims that these cubes cool a drink twice as fast as regular cubes of the same size. Verify whether this claim is true by a comparision of surface areas. (Hint: The ratio of areas is equal to the ratio of cooling speeds.)**