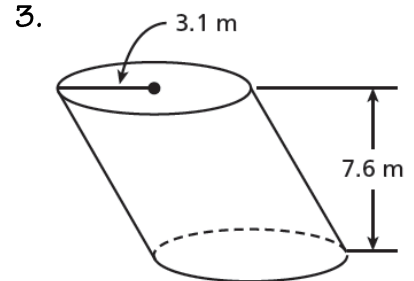
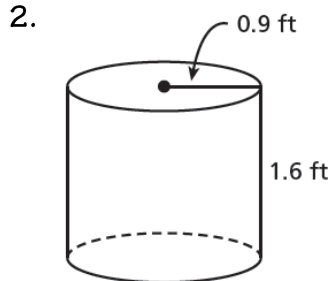
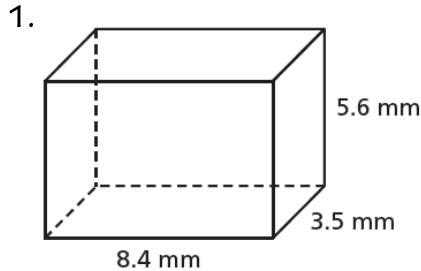


4.4.D1 – Volume of Prisms & Cylinders

SHOW YOUR WORK ON A SEPARATE SHEET OF PAPER.

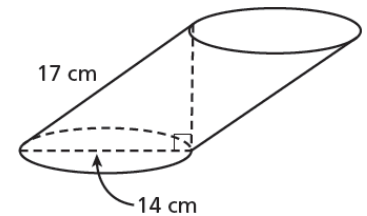
Find the volume of each prism or cylinder. Round your answer to the nearest hundredth, if necessary. For cylinders, also provide an answer in terms of π .



4. You gather data about two wood logs that are approximately cylindrical. The data are shown in the table. Based on your data, which wood is denser, aspen or juniper? Explain your reasoning.

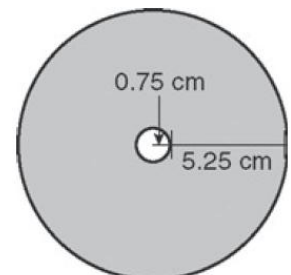
Type of Wood	Diameter (ft)	Height (ft)	Weight (lb)
Aspen	1.5	3	137.8
Juniper	2	5	549.8

5. A vase in the shape of an oblique cylinder has the dimensions shown at right. How many liters of water does the vase hold? Round your answer to the nearest hundredth. (*Hint: 1 liter = 1000 cm³*)

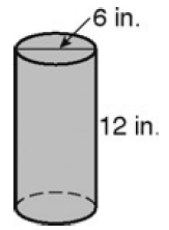


6. You have 500 cm³ of clay and want to make a sculpture in the shape of a cylinder. You want the height of the cylinder to be 3 times the cylinder's radius and you want to use ALL the clay. What radius and height should the sculpture have?

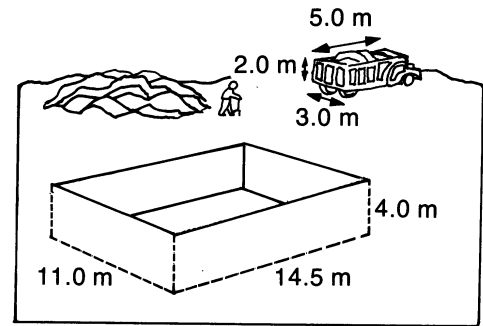
7. CDs have the dimensions shown in the figure. Each CD is 1 mm thick. Find the volume, in cubic centimeters, of a stack of 25 CDs. Round your answer to the nearest hundredth.



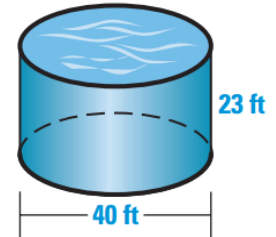
8. A cylindrical juice container has the dimensions shown. About how many cups of juice does this container hold? (*Hint: 1 cup = 14.44 in³*)



9. The excavation for a house and the trucks to carry away the material have the dimensions shown. About how many level truck loads are necessary to remove all the dirt?

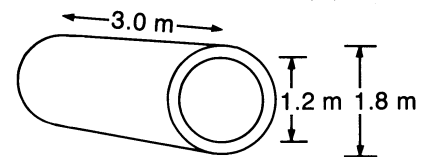


10. The Caribbean Coral Reef Tank at the New England Aquarium is a cylindrical tank that is 23 feet deep and 40 feet in diameter, as shown.



- What is the volume of the tank? Round to the nearest cubic foot.
- How many gallons of water are needed to fill the tank? (One gallon of water equals 0.1337 cubic foot.)
- Determine the weight of the water in the tank. (One gallon of salt water weighs about 8.56 pounds.)

11. A section of concrete pipe 3.0 m long has an inside diameter of 1.2 m and an outside diameter of 1.8 m. What is the volume of concrete in this section of pipe? (Round to the nearest tenth.)



12. Market Fresh Store sells two boxes of Toasty-O's. The "super-size" box costs \$4.98. The "regular-size" box costs \$2.49. Which box do you think is the "better deal?" Use your calculations to explain your answer. (Assume that the box is COMPLETELY full of cereal.)

